DIAMONDS AND THEIR MINERAL INCLUSIONS FROM THE SLOAN DIATREMES OF THE COLORADO-WYOMING STATE LINE KIMBERLITE DISTRICT, NORTH AMERICA

VOLUME II

TABLES, FIGURES, APPENDICES

by

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THESIS SUBMITTED IN FULFILMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

UNIVERSITY OF CAPE TOWN

OCTOBER, 1989

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TABLE 2.1

DESCRIPTIONS OF THE KIMBERLITE PHASES OF THE SLOAN 1 & 2 COMPLEX

DK 1: Black Border Phase - Grey to black tuffisitic kimberlite breccia. Small fragments of Precambrian crystalline rocks ubiquitous.

DK 2: Eastern Green Phase - Pale green tuffisitic kimberlite breccia containing macrocrysts of pyrope, ilmenite and chrome diopside. Extensive weathering has reduced much of the original mineral assemblage to talc and clay minerals. Xenoliths in the eastern portion of the outcrop area are mainly Precambrian crystalline rocks whereas those in the western portion are mainly Paleozoic limestones.

DK 3: Quarry Phase - Dark green to black tuffisitic kimberlite breccia. Characterized by very abundant small lapilli which are cored by serpentinized olivine macrocrysts. Pyrope, chrome diopside, ilmenite and phlogopite macrocrysts are fairly common.

DK 4: K-Phase - Hard, green tuffisitic kimberlite breccia. Macrocrysts of pyrope, high-chrome garnet, ilmenite and chrome diopside are common. Pelletal lapilli are well developed. Minor amounts of serpentine "pools" are also present. Limestone xenoliths are abundant.

DK 4: Light Green Spotted Phase - Green tuffisitic kimberlite breccia characterized by the presence of abundant blue-green "pools" of serpentine + calcite. Macrocrysts of pyrope, high chrome garnet, ilmenite, ortho- and clinopyroxene and phlogopite are all present. Pelletal lapilli are subtly preserved in some specimens. Limestone xenoliths are common.

DK 4: Olivine "Porphyry" Phase - Massive greenish-black macrocrystic kimberlite containing abundant partially serpentinized olivine macrocrysts. Fine-grained diopside laths are common in the groundmass.

DK 4: Yellow Ground - Friable kimberlite exhibiting intense limonite alteration. This map unit is deeply weathered and is probably not really a separate kimberlite phase at all. Relict textures in pit 44 resemble those of Quarry phase, but in pit 37 the original textures have been altered beyond recognition.

DK 5: Sloan 2 Phase - Pale green to nearly black macrocrystic kimberlite breccia. Pyrope, high-chrome garnet, ilmenite and chrome diopside macrocrysts and lherzolitic nodules are unusually abundant in this phase. Olivine macrocrysts are partially to completely serpentinized. The groundmass is highly phlogopitic.

DK 6: Brown "Porphyry" Phase - Hard brownish-black macrocrystic kimberlite. Serpentinized olivine macrocrysts are abundant; pyrope and ilmenite macrocrysts are present but less common. This unit occurs in the form of dykes which cut the Quarry and K phases.

Descriptions by K. Shaver (pers. comm. 1984).

TABLE 3.1

TEST PIT DIAMOND RECOVERY FIGURES FOR SLOAN 1 AND 2 COMPLEX

PIT NO.	KIMB. PHASE	RECOVERY METHOD SORTEX	GREASE	JIG	NO. OF STONES	NO. OF CARATS	PLANT EFFICIENCY	CTS/ 100t
** 5	DK2		x		100	1.79	High	3.6
** 8	DK2		x		166	3.54	High	7.1
9.	DK1		x		77	1.18	Mod	2.4
10.	DK1		x		73	-	-	-
14	DK2		x		87	1.52	Mod	3.0
15	DK2		x		115	2.33	Mod	4.7
19	DK2	x	x		67	2.13	Mod	4.3
20	DK2	x	x		188	4.66	Mod	9.3
24	DK2	x	x		461	6.95	Mod	13.9
+ 25	DK2	x	x		475	5.84	High	11.7
+ 26	DK2	x	x		268	4.20	High	8.4
+ 27	DK2	x	x		471	8.26	High	16.5
28	DK2		x		91	1.35	Low	2.7
29	DK2		x		70	0.60	Low	1.2
30	DK2		x		101	2.02	Low	4.0
**31	DK3	x	x		263	6.31	High	12.6
+ 32	DK3		x		704	5.32	High	10.6
+ 33	DK3		x		1106	8.78	High	17.6
+ 34	DK3		x		324	4.02	High	8.0
35	DK5	x	x		250	5.10	Mod	10.2
36	DK4		x		54	1.29	Low	2.5
37	DK4		x		94	2.04	Low	4.3
38	DK3 & DK6				405	5.83	Mod	11.7
39	DK4 & DK6		x		828	8.92	High	17.8
**40	DK6	x	x		220	2.67	Low	4.9
41	DK4	x	x		319	6.26	Mod	12.5
+ 42	DK3	x	x		195	3.12	High	6.2
+ 43	DK3	x	x		242	3.67	High	7.3
+ 44	DK3	x	x		334	3.96	High	7.9
+ 45	DK4		x		798	7.81	High	15.6
46	DK4 & DK6		x		451	7.19	High	14.4
**47	DK4		x		1284	10.65	High	21.3
+ 48	DK4	x	x		3328	20.71	High	16.2
49	DK4	x	x	x	225	2.85	Low	5.8
+ 50	DK1	x	x		71	0.90	High	1.8
51	DK2	x	x		170	3.18	Mod	6.4
**52.	DK1	x	x		143	2.24	High	4.5
**53.	DK1		x		157	1.93	High	3.9
54	DK5		x		71	1.28	Low	2.2
55	DK5		x		39	1.41	Low	2.2
**56	DK5	x	x		463	10.47	High	23.0
57	DK5		x		439	9.78	Mod	19.6
+ 58	DK5	x	x		343	11.93	High	23.9
+ 59	DK5	x	x		938	13.51	High	27.0
60	DK5	x	x		288	5.55	Mod	11.1
61	DK5		x		184	5.34	Mod	10.7
+ 62	DK5	x	x		534	8.46	High	16.9
+ 63	DK5	x	x		1459	29.32	High	59.8
+ 64	DK5	x	x		650	10.63	High	24.9
+ 65	DK5	x	x		1050	13.83	High	29.4
+ 66	DK5		x		326	9.65	High	19.3
67	DK4	x	x		639	-	-	-
			TOTALS		22258	302.28		

Footnotes :

1) ** pits from which Representative sample diamonds were derived.
2) + pits from which additional Sieved sample diamonds were derived
3) Plant cutoff : 0.5 mm
4) Plant efficiency : High >80 % Recovery
   Moderate 50-80 "
   Low <50 "
5) Only data from pits with Moderate or High efficiency ratings were used for average grade reported in Shaver, 1988.

TABLE 3.2

NUMBER OF DIAMONDS IN THE VARIOUS SAMPLES INVESTIGATED FROM SLOAN

	SIEVED SAMPLE	REPRESENTATIVE SAMPLE	SELECTED SAMPLE
TOTAL	14,723	1,816	103
SLOAN 1	9,803	1,138	80
DK 1	370	298	6
DK 2	1,400	263	22
DK 3	2,932	263	22
DK 4	5,101	314	27
UNDIFFERENTIATED	-	-	3
SLOAN 2 (DK 5)	4,704	462	19
DYKE (DK 6)	216	216	-
SLOAN 5	-	-	3
SLOAN 6	-	-	1

TABLE 3.3

CRYSTAL STATE OF THE SLOAN DIAMONDS

		PERCENTAGE OF (n)			
REPRESENTATIVE SAMPLE		WHOLE	BROKEN	UNKNOWN	WHOLE/BROKEN RATIO
TOTAL	n=1816	42.4	51.3	6.3	.83
SLOAN 1					
DK1-4	n=1138	42.6	48.4	9.0	.88
DK 1	n= 298	48.3	32.2	19.5	1.5
DK 2	n= 263	34.6	57.8	7.6	.60
DK 3	n= 263	41.8	52.1	6.1	.80
DK 4	n= 314	44.6	52.9	2.5	.84
SLOAN 2					
DK 5	n= 462	45.2	53.7	1.1	.84
DYKE					
DK 6	n= 216	35.2	61.6	3.2	.57
SELECTED SAMPLE					
TOTAL	n= 103	58.2	39.8	1.9	1.5

TABLE 3.4

CRYSTAL REGULARITY OF THE SLOAN DIAMONDS

REPRESENTATIVE SAMPLE		PERCENTAGE OF (n) EQUI-DIMENSIONAL	DISTORTED	UNKNOWN	UN-CLASSIFIED
TOTAL	n=1816	1.3	38.4	39.2	21.1
SLOAN 1					
DK 1-4	n=1138	1.8	40.2	37.8	20.3
DK 1	n= 298	.3	34.9	45.3	19.5
DK 2	n= 263	4.6	50.6	28.5	16.3
DK 3	n= 263	2.3	46.8	30.0	20.9
DK 4	n= 314	.3	30.9	44.9	23.9
SLOAN 2					
DK 5	n= 462	.4	35.3	39.4	24.9
DYKE					
DK 6	n= 216	.5	36.1	46.3	17.1
SELECTED SAMPLE					
TOTAL	n= 103	5.8	44.7	19.4	30.1

TABLE 3.5

PRIMARY MORPHOLOGY OF THE SLOAN DIAMONDS

PERCENTAGE OF (n)

REPRESENTATIVE SAMPLE		OCTA*	CUBO OCTA	CUBE	MACLE	SIMPLE AGGREGATE	PCA	UNKNOWN	SINGLE/TWINNED RATIO
TOTAL	n=1816	64.4	1.7	0.2	6.1	12.8	2.0	12.8	3.2
SLOAN 1									
DK 1-4	n=1138	61.3	1.5	0.2	6.4	11.6	2.1	16.9	3.1
DK 1	n= 298	67.8	0.3	-	8.1	11.7	0.3	11.7	3.4
DK 2	n= 263	53.6	1.1	0.4	4.6	5.7	5.7	28.9	3.4
DK 3	n= 263	62.4	1.1	-	4.9	14.1	1.9	15.6	3.0
DK 4	n= 314	60.8	3.2	0.3	7.6	14.3	1.0	12.7	2.8
SLOAN 2									
DK 5	n= 462	69.7	1.7	0.2	5.6	16.5	2.4	3.9	2.9
DYKE									
DK 6	n= 216	69.0	2.3	0.5	5.6	11.1	0.9	10.6	4.1
SELECTED SAMPLE									
TOTAL	n= 103	68.9	-	-	10.7	19.4	-	1.0	2.3
STATE LINE SAMPLE									
TOTAL	n= 78	49.0	-	-	10.0	35.0	-	6.0	1.1

* APPROXIMATELY ONE FIFTH OF THE OCTAHEDRA WERE CLASSIFIED AS "COMPLEX"

TABLE 3.6

RESORPTION MORPHOLOGY AND PRESERVATION OF THE SLOAN DIAMONDS

REPRESENTATIVE SAMPLE		% n IN EACH RESORPTION CATEGORY 5	4	3	2	1	U	% PRESERVATION* ALL CRYSTALS	WHOLE CRYSTALS ONLY	% n WITH NON-UNIFORM RESORPTION
TOTAL	n=1816	17.4	15.0	20.5	11.9	25.9	9.2	73.5	74.6	4.6
SLOAN 1										
DK 1-4	n=1138	15.6	13.9	19.2	11.9	27.3	12.0	72.2	74.0	5.0
DK 1	n= 298	18.8	18.1	16.4	13.1	23.8	9.7	74.4	75.9	6.4
DK 2	n= 263	16.7	14.1	17.1	8.0	23.2	20.9	74.1	74.9	6.5
DK 3	n= 263	12.9	11.4	21.7	12.9	31.6	9.5	70.8	72.6	3.8
DK 4	n= 314	14.0	11.8	21.7	13.0	30.6	8.9	71.3	72.9	3.5
SLOAN 2										
DK 5	n= 462	21.2	19.0	25.1	12.1	19.0	3.5	76.2	76.5	2.6
DYKE										
DK 6	n= 216	18.5	12.5	17.6	12.0	32.9	6.5	72.0	73.3	6.9
SELECTED SAMPLE										
TOTAL	n= 103	16.5	40.8	26.2	6.8	7.8	1.9	80.2	n.d.	7.8

* CALCULATED AS FOLLOWS:

ORIGINAL DATA (eg.DK6)	18.5	12.5	17.6	12.0	32.9	6.5	= 100%
UNKNOWN DATA OUT	"	"	"	"	"	-	= 93.5%
NORMALIZED TO 100%	19.8	13.4	18.8	12.8	35.2	-	= 100%
MULTIPLY EACH BY APPROPRIATE PRESERVATION VALUE	18.8	11.4	14.1	8.3	19.4		= 72% = PROPORTION OF SAMPLE REMAINING AFTER RESORPTION

TABLE 3.7

SIEVE SIZE OF THE SLOAN DIAMONDS

PERCENTAGE of (n)

SIEVED SAMPLE		-00	+00	+1	+3	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15	+16	+17	+18	+19	+20
TOTAL	n=14723	48.1	17.4	14.3	9.6	3.7	3.2	1.4	1.0	0.5	0.3	0.2	0.1	0.1	0.1	<.1	<.1	<.1	<.1	<.1	<.1
SLOAN 1																					
DK 1-4	n= 9803	56.5	16.1	12.0	7.4	3.1	2.3	0.9	0.7	0.4	0.2	0.1	0.1	0.1	<.1	<.1	<.1	<.1		<.1	0.1
DK 1	n= 370	46.5	19.5	15.1	8.4	4.1	3.0	1.6		0.5	0.5	0.3	0.3	0.3							
DK 2	n= 1400	38.4	21.6	16.8	10.8	3.7	3.2	1.8	1.3	0.9	0.5	0.3	0.1	0.2	0.1		0.1				0.1
DK 3	n= 2932	57.8	14.6	10.8	8.0	3.2	2.7	1.1	0.8	0.2	0.1	0.1	0.2	0.2	<.1	<.1	<.1				<.1
DK 4	n= 5101	61.4	15.2	11.1	6.1	2.7	1.7	0.6	0.5	0.3	0.2	0.1	<.1	<.1			<.1	<.1		<.1	<.1
SLOAN 2																					
DK 5	n= 4704	30.6	19.8	19.1	14.1	5.1	5.3	2.2	1.5	0.7	0.6	0.4	0.1	0.1	0.1	<.1	<.1	<.1	0.1		<.1
DYKE																					
DK 6	n= 216	46.8	20.8	13.9	8.3	2.8	0.9	2.3	1.4	0.9					0.5						
REPRESENTATIVE SAMPLE																					
TOTAL	n= 1816	37.9	18.8	16.0	11.8	4.2	4.3	2.6	1.6	1.0	0.3	0.6	0.1	0.1	0.1			0.1			0.1
SLOAN 1																					
DK 1-4	n= 1138	43.1	18.1	14.5	10.9	4.1	3.8	1.8	1.3	1.1	0.4	0.4	0.2	0.1							0.1
DK 1	n= 298	48.3	19.5	13.4	7.7	4.0	3.4	1.7		0.7	0.3	0.3	0.3	0.3							
DK 2	n= 263	22.0	23.2	20.1	12.8	3.0	5.3	2.7	2.7	2.7	0.8	0.4									
DK 3	n= 263	34.6	17.1	11.0	18.6	6.5	4.9	2.3	2.7	0.8	0.4	0.4	0.4								0.4
DK 4	n= 314	62.7	13.4	11.5	4.5	3.2	1.9	1.0	0.3	0.3		0.3									
SLOAN 2																					
DK 5	n= 462	21.2	19.7	20.6	15.8	5.2	7.1	4.5	2.3	1.1	0.4	1.3						0.2			
DYKE																					
DK 6	n= 216	46.8	20.8	13.9	8.3	2.8	0.9	2.3	1.4	0.9					0.5	0.5					

TABLE 3.8

SECONDARY SIZE OF THE SLOAN DIAMONDS (COMBINED SIEVE CLASSES)

		PERCENTAGE OF (n)		
		-3	+3 to -9	+9
SIEVED SAMPLE				
TOTAL	n=14723	79.8	18.9	1.3
SLOAN 1				
DK 1-4	n= 9803	84.6	14.4	1.0
DK 1	n= 370	81.1	17.1	1.9
DK 2	n= 1400	76.8	20.8	2.3
DK 3	n= 2932	83.2	15.8	1.0
DK 4	n= 5101	87.7	11.6	0.6
SLOAN 2				
DK 5	n= 4704	69.5	28.2	2.2
DYKE				
DK 6	n= 216	81.5	15.7	1.4
REPRESENTATIVE SAMPLE				
TOTAL	n= 1816	72.7	24.5	2.3
SLOAN 1				
DK 1-4	n= 1138	75.7	22.0	2.1
DK 1	n= 298	81.2	16.8	2.0
DK 2	n= 263	68.1	28.1	3.8
DK 3	n= 263	62.7	35.0	2.3
DK 4	n= 314	87.6	10.8	0.6
SLOAN 2				
DK 5	n= 462	61.5	35.0	3.0
DYKE				
DK 6	n= 216	81.5	15.7	1.4

Note: These data do not include the unknown category diamonds (Table 3.7) and therefore may not quite total 100%.

TABLE 3.9

PHYSICAL PROPERTIES OF THE VARIOUS DIAMOND TYPES
(Compiled from Orlov, 1973; Robinson, 1978; and Bibby, 1982)

PROPERTY	TYPE IaA	TYPE IaB	TYPE Ib	TYPE IIa	TYPE IIb
MORPHOLOGY	WELL SHAPED CRYSTALS; COARSE OSCILLATION STEPS			IRREGULAR CRYSTALS; FINE PARALLEL LAMINATIONS (GROWTH PATTERN)	
CLEAVAGE	IMPERFECT			PERFECT	
DENSITY OF ETCH PITS	RELATIVELY HIGH			RELATIVELY LOW	BORON REDUCES OXIDATION IN SYNTHETIC (HIGH BORON) DIAMONDS DUE TO INERT LAYER OF BORIC ACID
MECHANICAL STRENGTH	RELATIVELY WEAK			RELATIVELY STRONG	
ABRASION RESISTANCE	RELATIVELY LOW			RELATIVELY HIGH	
SIZE AND ABUNDANCE	98% OF LARGER, GEM QUALITY DIAMONDS		RELATIVE OCCURRENCE UNKNOWN MOST SYNTHETIC DIAMONDS ARE OF THIS VARIETY .1% AMBER DIAMONDS IN MOST S.AFRICAN LOCALITIES HIGH PROPORTION AT SWARTRUGGENS (2-5%)	MOST VERY LARGE GEMS ARE THOUGHT TO BE TYPE IIa INCLUDING THE CULLINAN DIAMOND	RELATIVE OCCURRENCE UNKNOWN RARE IN LARGER SIZES (EXCEPT FOR HOPE DIAMOND FROM INDIA) HIGH PROPORTION FOUND AT PREMIER AND SWARTRUGGENS
PHOTOLUMINESCENCE IN UV LIGHT	BLUE HUES DOMINATE			YELLOW-GREEN HUES DOMINATE	
ISOTROPY	CONSIDERABLE ANISOTROPY - BIREFRINGENCE DUE TO OCTA PLANE STRATIFICATION STRAIN			NEARLY ISOTROPIC - NO STRATIFICATION BIREFRINGENCE CHARACTERISTIC "TATAMI" BIREFRINGENCE DUE TO PLASTIC DEFORMATION	
COLOUR	COLOURLESS, LIGHT GREEN, BROWN	N3 CENTRES CAUSE ABSORPTION AT 390 nm GIVING A YELLOW COLOUR	CHARACTERISTIC AMBER OR ORANGE COLOUR - CANARY YELLOW N IN SINGLE SUBSTITUTIONAL FORM GIVES ABSORPTION AT 270 nm TAILING TO 600 nm	COLOURLESS, BROWN - BROWNS DUE TO WEAK ABSORPTION IN VISIBLE SPECTRUM CAUSED BY GRAPHITE	CHARACTERISTIC BLUE COLOUR BORON CAUSES ABSORPTION OF LONG RADIATION
UV ABSORPTION	STRONG AT < 3000 A			TRANSPARENT DOWN TO ~2250 A	
IR ABSORPTION	BANDS BETWEEN 6-13 μm (1666-770 cm^{-1})			TRANSPARENT AT 6-13 μm	
ELECTICAL PROPERTIES	INSULATING	INSULATING	INSULATING	INSULATING	SEMI-CONDUCTING
IMPURITIES	MOSTLY "A" FORM OF NITROGEN (SUBSTITUTIONAL PAIRS) NON-PARAMAGNETIC	MOSTLY "B" FORM OF NITROGEN (SUBSTITUTIONAL AGGREGATES) NON-PARAMAGNETIC	MOSTLY SINGLE SUBSTITUTIONAL NITROGEN ATOMS PARAMAGNETIC MINOR A,B + PLATELETS	MINOR AMOUNTS OF NITROGEN $\pm$ ALUMINIUM	SINGLE SUBSTITUTIONAL BORON ATOMS, NITROGEN AND ALUMINIUM ALSO PRESENT

TABLE 3.10

COLOURS OF THE SLOAN DIAMONDS

REPRESENTATIVE SAMPLE		PERCENTAGE OF (n) C	D	B	Y	A	G	P	U
TOTAL	n=1816	5.8	25.5	65.9	0.3	0.8	0.8	0.4	0.5
SLOAN 1									
DK 1-4	n=1138	6.3	27.5	62.4	0.4	1.0	1.1	0.4	0.8
DK 1	n= 298	6.7	43.1	47.8	0.7		0.7	1.0	
DK 2	n= 263	6.8	14.5	70.6	0.4	3.4	3.4		0.8
DK 3	n= 263	4.9	16.7	74.5	0.8	0.4	0.8	0.8	1.1
DK 4	n= 314	6.7	32.5	59.3		0.3			1.2
SLOAN 2									
DK 5	n= 462	3.7	24.7	70.3		0.6	0.4	0.2	
DYKE									
DK 6	n= 216	7.4	16.7	74.9				0.9	

C = COLOURLESS
D = GREY
B = BROWN
Y = YELLOW
A = AMBER
G = GREEN
P = PINK
U = OTHER OR UNKNOWN

TABLE 3.11

XENOLITHIC SURFACE FEATURES OF THE SLOAN DIAMONDS

		PERCENTAGE OF (n)								
		O	S	K	L	G	N	I	A	B
REPRESENTATIVE SAMPLE										
TOTAL	n=1816	1.0	0.7	5.2	12.1	4.8	3.8	1.3	21.3	24.8
SLOAN 1										
DK 1-4	n=1138	1.2	0.9	6.1	9.2	3.6	2.9	1.5	19.4	23.0
DK 1	n= 298	0.3		7.7	15.4	1.3	4.0	3.7	26.5	30.5
DK 2	n= 263	1.5	1.5	8.7	6.1	4.6	0.4	0.4	17.5	22.4
DK 3	n= 263	0.4	0.4	6.5	7.2	1.1	0.4	1.5	12.9	15.2
DK 4	n= 314	2.5	1.6	1.6	7.6	7.0	6.1	0.3	19.7	22.9
SLOAN 2										
DK 5	n= 462	0.9	0.4	3.0	17.3	8.2	6.9	1.1	26.2	28.1
DYKE										
DK 6	n= 216	0.5		5.6	15.7	3.7	1.9	0.9	20.8	26.9
SELECTED SAMPLE										
TOTAL	n= 103	5.7	5.7	4.9	7.8	4.9	6.8	2.9	22.3	28.2

O = SHARP EDGES
S = SMOOTH FACES
K = KNOB-LIKE ASPERITIES
L = SERRATE LAMINAE
G = GRAPHITE COAT/INTERGROWTH
N = ETCH CHANNEL
I = INTERGROWTH PIT
A = DIAMONDS WITH XENOLITHIC SURFACE TEXTURES
B = DIAMONDS WITH XENOLITHIC SURFACE TEXTURES AND/OR NON-UNIFORM RESORPTION

TABLE 3.12

DEFORMATION SURFACE FEATURES OF THE SLOAN DIAMONDS

		PERCENTAGE OF (n) WITH LAMINATION LINES
REPRESENTATIVE SAMPLE		
TOTAL	n=1816	2.0
SLOAN 1		
DK 1-4	n=1138	1.9
DK 1	n= 298	2.3
DK 2	n= 263	1.1
DK 3	n= 263	0.8
DK 4	n= 314	3.2
SLOAN 2		
DK 5	n= 462	2.2
DYKE		
DK 6	n= 216	2.3
SELECTED SAMPLE		
TOTAL	n= 103	1.0

TABLE 3.13

OTHER SURFACE FEATURES OF THE SLOAN DIAMONDS

PERCENTAGE OF (n)

		GROWTH	RESORPTION								LATE STAGE ETCHING		BREAKAGE			SURFACE DISCOLORATION
		A	B	J	K	C	D	F	H	I	N	Y	4	5	6	7
REPRESENTATIVE SAMPLE																
TOTAL	n=1816	6.9	8.8	2.6	1.8	28.9	2.0	1.7	1.7	3.7	5.7	0.9	8.5	12.2	15.8	0.7
SLOAN 1																
DK 1-4	n=1138	7.0	8.1	3.3	2.5	20.7	1.1	0.8	1.6	4.0	1.0	0.8	8.3	9.8	10.0	1.0
DK 1	n= 298	11.7	11.7	1.0	4.0	26.2	1.7	0.3	-	4.0	0.7	1.0	22.9	5.2	17.7	3.4
DK 2	n= 263	1.9	1.9	1.1	4.6	11.8	0.4	1.1	3.4	4.2	0.8	1.1	3.3	13.8	1.3	3.8
DK 3	n= 263	4.2	4.2	2.7	0.8	19.0	1.5	0.4	1.5	3.0	-	-	5.1	10.2	13.1	0.4
DK 4	n= 314	9.2	13.1	5.4	3.5	24.2	0.6	1.3	1.6	4.8	0.3	1.0	6.9	8.3	12.5	-
SLOAN 2																
DK 5	n= 462	7.4	11.9	1.1	0.9	46.1	4.3	3.5	1.5	3.9	20.1	1.1	11.9	18.3	22.5	0.2
DYKE																
DK 6	n= 216	5.6	5.6	2.3	0.5	35.2	1.9	2.8	2.8	1.4	-	1.4	3.0	10.5	25.6	-
SELECTED SAMPLE																
TOTAL	n= 103	23.3	19.4	-	1.9	47.6	10.7	-	-	3.9	-	1.0	3.9	8.7	5.8	1.0

A = TRIANGULAR PLATES
B = SHIELD-SHAPED LAMINAE
J = TERRACES
K = ELONGATE HILLOCKS
C = NEGATIVELY-ORIENTED TRIGONAL ETCH PITS
D = HEXAGONAL ETCH PITS
F = NEGATIVELY-ORIENTED TETRAGONAL ETCH PITS
H = CRESCENTIC STEPS
I = MACLE LINE
N = CORROSION SCULPTURE
Y = FROSTING
4 = CLEAVAGE BREAK
5 = INCLUSION PIT ON BROKEN SURFACE
6 = RESORBED BROKEN SURFACE
7 = GREEN SPOTS

TABLE 3.14

INCLUSION CONTENT OF THE SLOAN DIAMONDS
(Visual assessment - % of n)

REPRESENTATIVE SAMPLE		SECONDARY INCLUSIONS			PRIMARY INCLUSIONS																
					GENERAL			OPAQUE			TRANSPARENT								PARAGENESIS		
		P	A	U	P	O	T	S	X	C	C	P	O	L	A	W	OL	OC	E	P	U
TOTAL	n=1816	66.9	30.0	3.1	63.0	61.6	3.7	34.0	28.7	0.1	2.3	0.1	0.9	0.2	0.5	0.1	0.1	0.1	1.5	0.1	98.4
SLOAN 1																					
DK 1-4	n=1138	65.0	30.2	4.7	58.6	56.9	3.7	30.9	27.7	0.1	2.1	0.1	0.9	0.4	0.5	0.2	0.1	0.1	1.3	0.1	98.6
DK 1	n= 298	71.8	26.2	2.0	61.4	59.7	3.0	32.9	26.8	0.3	1.7	-	0.7	-	0.3	0.3	-	-	1.3	-	98.7
DK 2	n= 263	51.0	36.1	12.9	59.7	54.0	5.7	30.0	30.0	-	3.0	0.4	1.9	1.1	0.4	0.4	0.4	-	1.9	-	98.1
DK 3	n= 263	72.2	23.6	4.2	47.1	46.8	2.7	28.5	19.4	-	1.1	-	0.8	0.4	0.4	-	-	-	1.1	-	98.9
DK 4	n= 314	64.3	34.7	1.0	64.6	65.0	3.5	31.8	33.4	-	2.5	-	0.3	-	1.0	-	-	0.3	1.0	0.3	98.7
SLOAN 2																					
DK 5	n= 462	72.3	27.0	0.6	69.3	68.6	3.5	39.6	27.5	-	2.2	-	1.3	-	0.4	-	-	-	2.8	-	97.2
DYKE																					
DK 6	n= 216	65.3	34.7	-	72.7	71.3	4.2	38.4	36.6	-	3.7	-	-	-	0.5	-	-	-	-	-	100

P = PRESENT
A = ABSENT
U = UNKNOWN

P = PRIMARY INC
O = OPAQUE
T = TRANSPARENT

S = ROSETTE
X = DISCRETE
C = CLOUD

C = COLOURLESS
P = PURPLE
O = PALE ORANGE
L = PALE GREEN
A = AMBER
W = BROWN
OL = BIMINERALIC ORANGE/PALE GREEN
OC = BIMINERALIC ORANGE/COLOURLESS

E = ECLOGITIC
P = PERIDOTITIC
U = UNKNOWN

TABLE 3.15

COEXISTING PRIMARY INCLUSIONS IN THE SLOAN DIAMONDS
(VISUAL ASSESSMENT)

	TOTAL	SLOAN 1	DK1	DK2	DK3	DK4	SLOAN 2	DYKE
OL,O,L,S	1	1		1				
O,L,S	1	1		1				
O,A,S	1	1		1				
C,A,S	1						1	
C,O,X	1						1	
C,S,X	1							1
C,S	15	5			2	3	6	4
C,X	9	7	3	3		1	2	
O,S	7	4	1	1	2		3	
O,X	1						1	
L,S	1	1			1			
L,X	1	1		1				
A,S	1	1			1			
A,C	2	2				2		
C,O	1	1		1				
S,X	31	13	1	9	2	1	9	9

OL = ORANGE/LIGHT GREEN BIMINERALIC
O = PALE ORANGE
L = LIGHT GREEN
A = AMBER
C = COLOURLESS
S = ROSETTE OPAQUE
X = DISCRETE OPAQUE

TABLE 3.16

CRYSTAL STATE VERSUS SIEVE CLASS FOR SLOAN DIAMONDS

	WHOLE/BROKEN CRYSTAL RATIO		
	-3	+3 to -9	+9
REPRESENTATIVE SAMPLE			
TOTAL	.91	.63	.70
SLOAN 1			
DK 1-4	.95	.70	1.0
DK 1	1.6	1.2	1.5
DK 2	.66	.51	.29
DK 3	1.0	.48	2.0
DK 4	.78	1.6	∞
SLOAN 2			
DK 5	1.1	.55	.56
DYKE			
DK 6	.58	.63	-

TABLE 3.17

CRYSTAL STATE VERSUS COLOUR FOR SLOAN DIAMONDS

REPRESENTATIVE SAMPLE	WHOLE/BROKEN CRYSTAL RATIO COLOURLESS	GREY	BROWN
TOTAL	1.6	1.1	.72
SLOAN 1			
DK 1-4	2.2	1.2	.76
DK 1	1.7	2.6	1.2
DK 2	1.6	1.1	.53
DK 3	12.0	1.0	.69
DK 4	2.0	.60	.88
SLOAN 2			
DK 5	1.1	.95	.77
DYKE			
DK 6	.67	.70	.52

TABLE 3.18

PERCENTAGE PRESERVATION VERSUS SIEVE CLASS FOR SLOAN DIAMONDS
(WHOLE DIAMONDS ONLY)

REPRESENTATIVE SAMPLE	-00	+00 +0	+1 +2	+3 +4	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15	+16	+17	+18	+19	+20
TOTAL	68.5	73.3	75.3	74.5	76.4	78.5	77.9	82.8	71.3	66.9	80.3	55.0	55.0				55.0			85.0
SLOAN 1																				
DK 1-4	69.4	71.8	75.2	72.2	75.1	75.3	79.4	73.4	75.9	55.0	92.5	55.0	55.0							85.0
DK 1	70.8	71.2	79.5	84.8	71.6	93.1	86.0		65.0		100		55.0							
DK 2	74.8	69.7	75.8	65.5	73.7	65.0	78.0	77.7	85.6											
DK 3	66.9	70.8	70.6	72.8	78.9	65.0	75.4	70.8	65.0	55.0		55.0								85.0
DK 4	67.6	75.7	72.9	69.9	75.7	71.2	80.0	65.0	85.0		85.0									
SLOAN 2																				
DK 5	68.0	74.0	73.8	78.0	90.6	91.0	81.1	96.6	55.0	85.0	65.0						55.0			
DYKE																				
DK 6	64.6	81.5	83.1	78.1	59.2	58.3	63.8	85.0												

TABLE 3.19

% PRESERVATION VERSUS COMBINED SIEVE CLASS FOR SLOAN DIAMONDS

REPRESENTATIVE SAMPLE	-3	+3 to -9	+9
TOTAL	72.1%	77.3%	70.0%
SLOAN 1			
DK 1-4	71.9%	74.6%	75.6%
DK 1	73.0%	83.1%	66.5%
DK 2	73.9%	72.0%	85.6%
DK 3	69.8%	72.4%	76.3%
DK 4	70.7%	72.9%	85.4%
SLOAN 2			
DK 5	72.3%	85.2%	58.6%
DYKE			
DK 6	73.6%	67.8%	-

TABLE 3.20

COLOUR VERSUS MORPHOLOGY FOR SLOAN DIAMONDS

REPRESENTATIVE SAMPLE	SINGLE/TWINNED CRYSTAL RATIO COLOURLESS	GREY	BROWN
TOTAL	3.1	2.5	3.6
SLOAN 1			
DK 1-4	2.5	2.7	3.6
DK 1	2.2	2.7	4.6
DK 2	6.5	2.0	3.8
DK 3	2.2	2.2	3.6
DK 4	1.7	3.3	2.9
SLOAN 2			
DK 5	3.0	2.3	3.2
DYKE			
DK 6	15.0	2.1	4.6

TABLE 3.21

PRIMARY MORPHOLOGY VERSUS SIEVE CLASS FOR SLOAN DIAMONDS
(ALL SAMPLES)

REPRESENTATIVE SAMPLE	SINGLE/TWINNED CRYSTAL RATIO -3	+3 to -9	+9
TOTAL	3.5	2.8	1.2
SLOAN 1			
DK 1-4	3.5	2.6	1.1
DK 1	4.0	2.1	1.0
DK 2	4.6	3.2	.75
DK 3	3.9	2.3	1.5
DK 4	2.7	3.4	2.0
SLOAN 2			
DK 5	2.8	3.5	2.4
DYKE			
DK 6	4.9	2.2	2.0

TABLE 3.22

PRIMARY MORPHOLOGY VERSUS PRIMARY MASS FOR SLOAN DIAMONDS
(WHOLE CRYSTALS ONLY)

	SINGLE/TWINNED CRYSTAL RATIO		
REPRESENTATIVE SAMPLE	<.02 ct	.02 to .07 ct	>.07 ct
TOTAL	2.5	2.5	2.4
SLOAN 1			
DK 1-4	2.5	2.6	1.7
DK 1	2.5	1.0	3.0
DK 2	2.8	3.4	.60
DK 3	3.6	2.7	2.3
DK 4	1.9	2.2	4.0
SLOAN 2			
DK 5	2.1	2.7	5.5
DYKE			
DK 6	4.1	1.0	3.0

TABLE 3.23

SUMMARY OF NOTABLE RELATIONSHIPS BETWEEN PHYSICAL CHARACTERISTICS OF SLOAN DIAMONDS

VARIATION IN CRYSTAL STATE	LARGE DIAMONDS MORE SUSCEPTIBLE TO BREAKAGE RELATIVE TO SMALL DIAMONDS	BROWN DIAMONDS MORE SUSCEPTIBLE TO BREAKAGE RELATIVE TO GREY DIAMONDS
VARIATION IN PRESERVATION	LARGE DIAMONDS LESS RESORBED RELATIVE TO SMALL DIAMONDS	
VARIATION IN PRIMARY MORPHOLOGY	HIGHER PROPORTION OF TWINNED/AGGREGATE CRYSTALS IN GREY DIAMOND SUBSAMPLE RELATIVE TO BROWN DIAMOND SUBSAMPLE	NO SYSTEMATIC VARIATION WITH SIZE
VARIATION IN COLOUR	HIGHER PROPORTION OF BROWN DIAMONDS IN SMALL SIZES RELATIVE TO LARGER SIZES	

TABLE 3.24

SUMMARY OF PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS SIGNIFICANT DIFFERENCES BETWEEN KIMBERLITE PHASES

	SLOAN 1				SLOAN 2	DYKE
	DK 1	DK 2	DK 3	DK 4	DK 5	DK 6
CRYSTAL STATE	HIGHER PROPORTION OF WHOLE CRYSTALS	HIGHER PROPORTION OF BROKEN CRYSTALS				
PRIMARY MORPHOLOGY	SIMILAR RELATIVE PROPORTIONS OF SINGLE TO TWINNED CRYSTALS IN ALL PHASES					
RESORPTION MORPHOLOGY	74% PRESERVATION		MOST RESORBED 71% PRESERVATION		BEST PRESERVED 76% PRESERVATION	72% PRESERVATION
SIEVE SIZE/ PRIMARY MASS	HIGHER PROPORTION OF SMALL DIAMONDS (SIMILAR RELATIVE ABUNDANCES BETWEEN PHASES)				HIGHER PROPORTION OF LARGE DIAMONDS	HIGHER PROPORTION OF SMALL DIAMONDS
COLOUR	SIMILAR RELATIVE ABUNDANCES - BROWN > GREY > COLOURLESS					
	HIGH PROPORTION OF GREY DIAMONDS		HIGH PROPORTION OF GREY DIAMONDS			
SURFACE FEATURES	FEW DIAMONDS EXHIBITING CORROSION SCULPTURE				LATE STAGE CORROSION SCULPTURE HIGH PROPORTION OF ETCH PITS	NO CORROSION SCULPTURE
INCLUSION CONTENT	NO DIFFERENCES FOUND					

TABLE 4.1

RADIOGENIC ISOTOPE MODEL AGES FOR DIAMONDS

SOURCE	SOURCE AGE	PERIDOTITIC	ECLOGITIC
PREMIER	1180±30 Ma[1]	-	1150±60 Ma[2]
ARGYLE	1130 Ma[3]	-	1580±60 Ma[2]
FINSCH	118 Ma[1]	3300 Ma[4]	1670±40 Ma[5]
KIMBERLEY	90 Ma[6]	3300 Ma[4]	-

REFERENCES

1. Smith, 1983
2. Richardson, 1986
3. Skinner et al., 1985
4. Richardson et al., 1984
5. Smith et al., 1989a
6. Davis, 1977

TABLE 4.2

MINERALS REPORTED FROM DIAMONDS WORLDWIDE
(Meyer, 1987)

Protogenetic and/or syngenetic			
Ultramafic	**Eclogitic**	**Epigenetic**	**Uncertain**
Forsterite	Omphacite	Serpentine	Phlogopite
Enstatite	Pyrope-almandine	Calcite	Biotite
Diopside	Kyanite	Graphite	Muscovite
Cr-pyrope	Sanidine	Haematite	Amphibole
Cr-spinel	Coesite (quartz)	Kaolinite	Magnetite
Mg-ilmenite	Rutile	Acmite	Apatite
Sulphides	Ruby	Richterite	
Zircon	Ilmenite	Perovskite	
Diamond	Chromite	Mn-ilmenite	
Native iron	Sulphides	Spinel	
	Diamond	Xenotime	
		Sellaite	
		Goethite	

TABLE 4.3

MINERALS RECOVERED FROM SLOAN DIAMONDS
(this study)

Primary	**Possibly Primary**	**Secondary**
Pyrope-almandine (32)	SiO_2 (5)	Serpentine (29)
Sulphide (23)	Diopside (3)	Calcite (8)
Omphacitic cpx (19)	Moissanite (3)	Goethite (2)
Olivine (16)	Corundum (2)	Hematite (2)
Rutile (12)	Wollastonite (1)	Magnetite (1)
Orthopyroxene (4)	Hornblende (1)	
Coesite (3)	Si-Ti-K phase (1)	
K-feldspar (2)	Sphene (1)	
Chrome pyrope (2)	Titanomagnetite (1)	
Chrome diopside (1)	Magnetite (1)	
Ferro-periclase (1)	Ilmenite (1)	
Kyanite (1)		
Zircon (1)		

(n) Denotes number of diamonds

TABLE 4.4

SLOAN DIAMOND PARAGENESIS

No. of Diamonds	Primary Inclusions	a. Based only on Garnet, Olivine, Clinopyroxene and Orthopyroxene			b. Assuming: (1) Rutile, Coesite, K-feldspar & Kyanite are Eclogitic; (2) Ferro-periclase is Peridotitic			c. Assuming: Sulphide is Eclogitic		
		Ecl.	Perid.	Uncert.	Ecl.	Perid.	Uncert.	Ecl.	Perid.	Uncert.
34	Garnet	31	2	1	31	2	1	31	2	1
23	Sulphide	8		15	10		13	23		
20	Clinopyroxene	19	1		19	1		19	1	
16	Olivine		15	1		15	1		15	1
12	Rutile	3		9	12			12		
4	Orthopyroxene		4			4			4	
3	Coesite	1		2	3			3		
2	K-feldspar			2	2			2		
1	Kyanite			1	1			1		
1	Zircon			1			1			1
1	Ferro-periclase			1		1			1	
No. of diamonds represented (NOT A TOTAL!)		43	18	28	55	19	15	68	19	2

TABLE 4.5

COEXISTING PRIMARY INCLUSIONS RECOVERED FROM SLOAN DIAMONDS

PERIDOTITIC PARAGENESIS	NO. OF DIAMONDS
Olivine/Cr-poor pyrope	2
Olivine/orthopyroxene	2
ECLOGITIC PARAGENESIS	
Pyrope-almandine/Omphacite/Rutile/Sulphide	1
Pyrope-almandine/Omphacite	6
Omphacite/Sulphide	5
Pyrope-almandine/Sulphide	2
Rutile/Sulphide	2
Pyrope-almandine/Rutile	1
Omphacite/Rutile	1
Pyrope-almandine/Coesite	1
Coesite/K-feldspar	1
MIXED PARAGENESIS	
Olivine/Pyrope-almandine	1

TABLE 4.6

EQUILIBRATION TEMPERATURES AND PRESSURES FOR SLOAN DIAMONDS

PERIDOTITIC INCLUSIONS	TEMPERATURE (°C)	METHOD	PRESSURE (kbar)	METHOD	FURTHER CONSIDERATIONS
CPX (A78)	1224	LINDSLEY AND DIXON (1976, 20 kbar	-	-	ASSUMING THE CPX COEXISTED IN EQUILIBRIUM WITH OPX
GAR/OLV (27-6)	1294	O'NEILL AND WOOD (1979,1980)	50	ASSUMED	IN GRAPHITE STABILITY FIELD
GAR/OLV (A12)	1374	"	50	ASSUMED	
OPX (A25,A34,A64,A88)	1224	ASSUMED	59-69	MACGREGOR (1974)	
OPX (A25,A34,A64,A88)	1225-1325	BOYD AND NIXON (1973)	62-73	"	ASSUMING THE OPX COEXISTED IN EQUILIBRIUM WITH CPX
GAR/OLV (27-6,A12) OPX (A25,A34,A64,A88)	1343-1469	O'NEILL AND WOOD (1979,1980)	64-83	MACGREGOR (1974)	ASSUMING GAR, OLV AND OPX COEXISTED IN EQUILIBRIUM
GAR/OLV (27-6,A12) OPX (A25,A34,A64,A88)	1315-1458	"	56-79	NICKEL AND GREEN (1985)	AND SIMULTANEOUS ITERATIVE CALCULATION
RANGES	**1224-1469**		**56-83**		
ECLOGITIC INCLUSIONS					
GAR/CPX (1-10)	1114	ELLIS AND GREEN (1979)	50	ASSUMED	
" (1-15-1)	1256	"	"	"	
" (1-15-2)	989	"	"	"	
" (5-4)	1087	"	"	"	
" (8-3)	1095	"	"	"	
" (45-3)	1074	"	"	"	
" (A37)	1102	"	"	"	
" (A73)	1088	"	"	"	
RANGE	**1087-1114**				

TABLE 4.7

CLINOPYROXENE INCLUSIONS FROM SLOAN DIAMONDS

(Meyer and McCallum, 1986)

	B	C	D	E	F	G
SiO_2	52.5	54.5	54.5	53.8	54.0	52.3
TiO_2	0.48	0.14	0.46	0.41	0.43	0.25
Al_2O_3	0.52	1.38	6.86	7.17	0.64	1.18
Cr_2O_3	0.04	0.09	ND	ND	0.05	0.12
FeO	5.91	3.71	6.64	5.61	6.61	28.9
MnO	0.21	0.08	0.05	0.07	0.11	ND
MgO	15.0	16.5	10.8	11.1	14.6	0.17
CaO	24.1	23.7	16.6	16.6	22.5	0.48
Na_2O	1.17	0.73	3.78	3.88	1.82	14.1
K_2O	0.04	0.02	0.50	0.79	ND	0.13
TOTAL	99.97	100.85	100.19	99.43	100.76	97.62

TABLE 4.8

SIMPLIFIED CLINOPYROXENE ENDMEMBERS
(after Hatton, 1978)

$CaAlAlSiO_6$	Ca Tschermak's molecule
$NaAlSi_2O_6$	Jadeite-Ureyite
$KAlSi_2O_6$	
$NaCrSi_2O_6$	
$NaTiAlSiO_6$	
$NaFeSi_2O_6$	Acmite
$Ca_{0.5}AlSi_2O_6$	Pseudojadeite
$CaMgSi_2O_6$	Diopside-Hedenbergite
$CaFeSi_2O_6$	
$MgMgSi_2O_6$	Enstatite-Ferrosilite
$FeFeSi_2O_6$	

TABLE 4.9

ECLOGITIC PARAGENESES OF DIAMONDS OF THE SIBERIAN PLATFORM
(after Sobolev, 1984b)

MINERAL PARAGENESES	MINERALS	SPECIAL FEATURES
Eclogite	Mg-Fe-Gar+Cpx ($\pm$Rut$\pm$Mag$\pm$Fel$\pm$Irn$\pm$Sul)	Na in Gar, K in Cpx
Coesite Eclogite	Mg-Fe-Gar+Cpx+Coe($\pm$Ru)	Coe
Ilmenite Eclogite	Mg-Fe-Gar+Ilm($\pm$Cpx)	Ilm
Kyanite Eclogite	Mg-Fe-Gar+Cpx+Kyn ($\pm$Cor$\pm$Rut)	Kyn
Corundum Eclogite	Mg-Fe-Gar+Cpx+Cor ($\pm$Rut$\pm$Kyn)	Cor
Grospydite	Mg-Ca-Gar+Cpx+Kyn	Ca-Gar(>50%Ca)+Kyn

Symbols: Gar - garnet; Cpx - clinopyroxene; Ilm - ilmenite;
Rut - rutile; Mag - magnetite; Fel - K-feldspar;
Coe - coesite; Kyn - kyanite; Cor - corundum;
Sul - sulphides; Irn - Native Iron

TABLE 4.10

CORUNDUM COMPOSITIONS

	POSSIBLE PRIMARY INCLUSION CORUNDUMS		POSSIBLE CONTAMINANT CORUNDUM
	1-14	A52	
SiO_2	ND	ND	ND
TiO_2	2.01	1.14	1.54
Al_2O_3	96.2	98.0	95.1
Cr_2O_3	ND	ND	ND
FeO	ND	ND	ND
MnO	ND	ND	ND
MgO	.05	.04	.04
CaO	.04	.03	ND
Na_2O	-	-	ND
K_2O	-	-	ND
TOTAL	98.30	99.21	96.68

TABLE 4.11

PARAGENESIS VERSUS PRIMARY MORPHOLOGY

		PERCENTAGE OF n	
CRYSTAL FORM	Total	Eclogitic	Peridotitic
	n=153	n=59	n=19
OCTAHEDRA	68.9	82.4	26.3
TWIN/AGGEGATE	30.1	17.6	73.7
UNKNOWN	1	-	-
SINGLE/TWINNED	2.3	4.7	0.4

TABLE 4.12

PARAGENESIS VERSUS COLOUR

	COLOURLESS	GREY	BROWN	YELLOW
PERIDOTITIC	21.0 %	10.5 %	68.4 %	-
ECLOGITIC	22.0 %	14.7 %	57.4 %	5.9 %

TABLE 4.13

PARAGENESIS VERSUS DIAMOND PRESERVATION

	% PRESERVATION	
	ECLOGITIC	PERIDOTITIC
WHOLE CRYSTALS	76.7	88.5
<.02 carats	79.2	88.5
.02 - .06 carats	75.4	
>.06 carats	76.8	

TABLE 5.1

SUMMARY OF CARBON ISOTOPE CHARACTERISTICS OF THE SLOAN DIAMONDS
(BY GROUP)

	RANGE OF AVERAGE VALUES	$\delta^{13}C$ RANGE	$\delta^{13}C$ AVERAGE	STD.DEV. (1σ)	INTERNAL HOMOGENEITY	DISTRIBUTION SHAPE*	MODELLED TEMPERATURE
GROUP I (n=16)	-3.8 to -5.9 $^{o}/_{oo}$	2.1 $^{o}/_{oo}$	-4.8 $^{o}/_{oo}$	.7 $^{o}/_{oo}$	HOMOGENEOUS	- NORMAL	1300°C
GROUP II (n=21)	-8.5 to -12.8 $^{o}/_{oo}$	4.3 $^{o}/_{oo}$	-9.9 $^{o}/_{oo}$	1.3 $^{o}/_{oo}$	HOMOGENEOUS	NEGATIVELY SKEWED	1100°C
GROUP III (n=57)	-12.5 to -29.4 $^{o}/_{oo}$	16.9 $^{o}/_{oo}$	-20.2 $^{o}/_{oo}$	3.9 $^{o}/_{oo}$	INHOMOGENEOUS	NORMAL	1100°C

* Distribution shape is difficult to assess with so few data points. Note that the Group I data, which appears to be negatively skewed in Figure 5.7, would be positively skewed if the data were plotted between, rather than centred on, integer $^{o}/_{oo}$ values.

TABLE 5.2

EXTRAPOLATED FRACTIONATION FACTORS USED IN MODELLING

	1000 ln α DIAMOND-X		
	1100°C	1300°C	1020°C (modelled by) (Deines,1980)
DIAMOND - CH_4	.8	.4	1
DIAMOND - GRAPHITE	.4	.3	
DIAMOND - CARBONATE	-3	-1	
DIAMOND - CO_2	-3	-1	-4

TABLE 5.3

INITIAL SOURCE $\delta^{13}C$ COMPOSITIONS MODELLED WITH CLOSED SYSTEM RAYLEIGH FRACTIONATION

	GROUP III		GROUP II		GROUP I	
	1000lnα	Modelled source	1000lnα	Modelled source	1000lnα	Modelled source
CH_4	0.8	-13.3	0.8	-9.3	0.4	-4.2
GRAPHITE	0.4	-12.9	0.4	-8.9	0.3	-4.1
CO_2/CARBONATE	-3	-26.4	-3	-9.8	-1	-4.9

TABLE 5.4

PARAGENETIC DIAMOND SUBPOPULATIONS AT SLOAN

	DIAMOND CHARACTERISTICS				INCLUSION CHARACTERISTICS		
	CARBON ISOTOPE COMPOSITION						
COMPOSITIONAL GROUP	$\delta^{13}C$ ($^{o}/_{oo}$)	INTERNAL HOMOGENEITY	SECONDARY MASS	MORPHOLOGY	OLIVINE	CLINOPYROXENE	GARNET
GROUP I - PERIDOTITIC n=16	-3.8 to -5.9	Homogeneous	<.005 - .01cts	Mostly twinned crystals	Cr-rich, Mg-poor	Cr-diopside	Cr-pyrope
GROUP II - ECLOGITIC n=21	-8.5 to -12.8	Homogeneous	.02 - .35cts	Mostly single crystals	-	Omphacitic Jadeite-poor	Pyrope-almandine Mn-rich, Mg-rich
GROUP III - ECLOGITIC n=57 and PERIDOTITIC	-12.4 to -29.4	Inhomogeneous	.005 - .06cts	Mostly single crystals	Cr-poor, Mg-rich	Omphacitic Jadeite-rich and Diopsidic	Pyrope-almandine Mn-poor, Mg-poor and Pyrope-almandine Mn-rich, Mg-poor

LIST OF FIGURES

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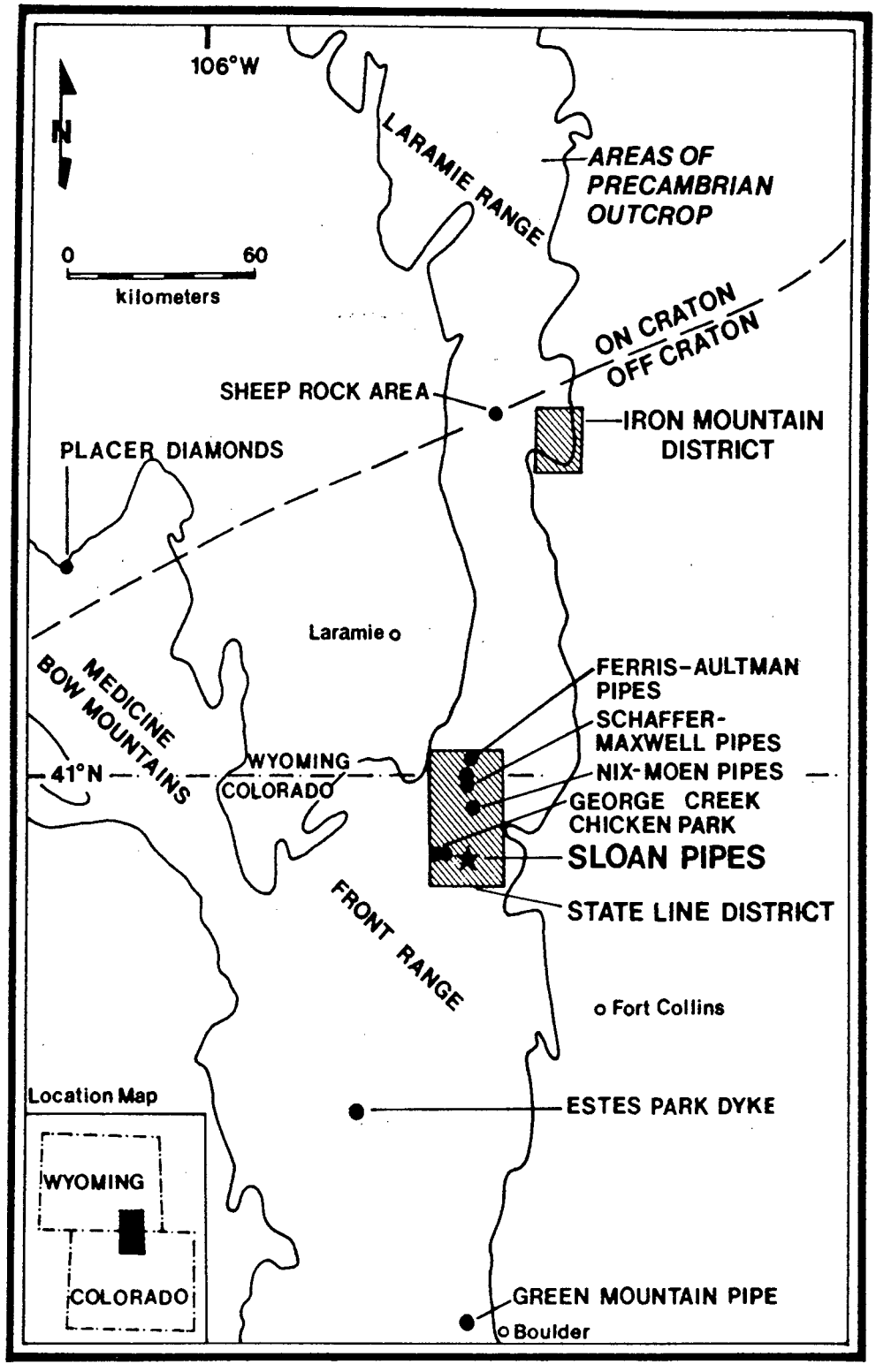


FIGURE 2.1 A map of the Colorado-Wyoming kimberlite province, showing the major kimberlite localities as well as other features of interest. The hatched area is the Colorado-Wyoming State Line kimberlite district.

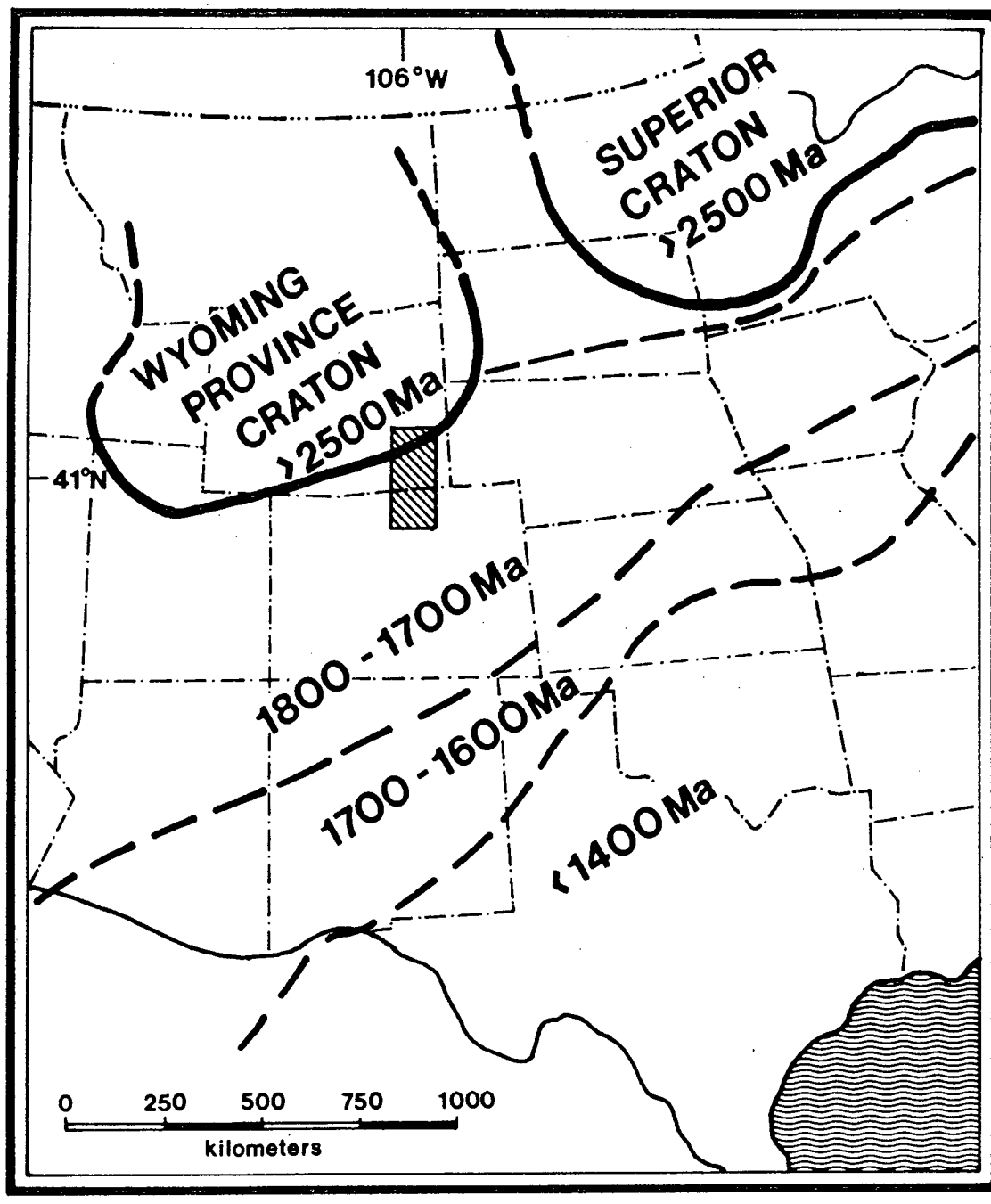


FIGURE 2.2 A generalized sketch map showing early Proterozoic accreted crustal provinces south of the Archaean Wyoming Province craton. The hatched area is the approximate position of the Colorado-Wyoming kimberlite province. Modified from Karlstrom and Houston (1984).

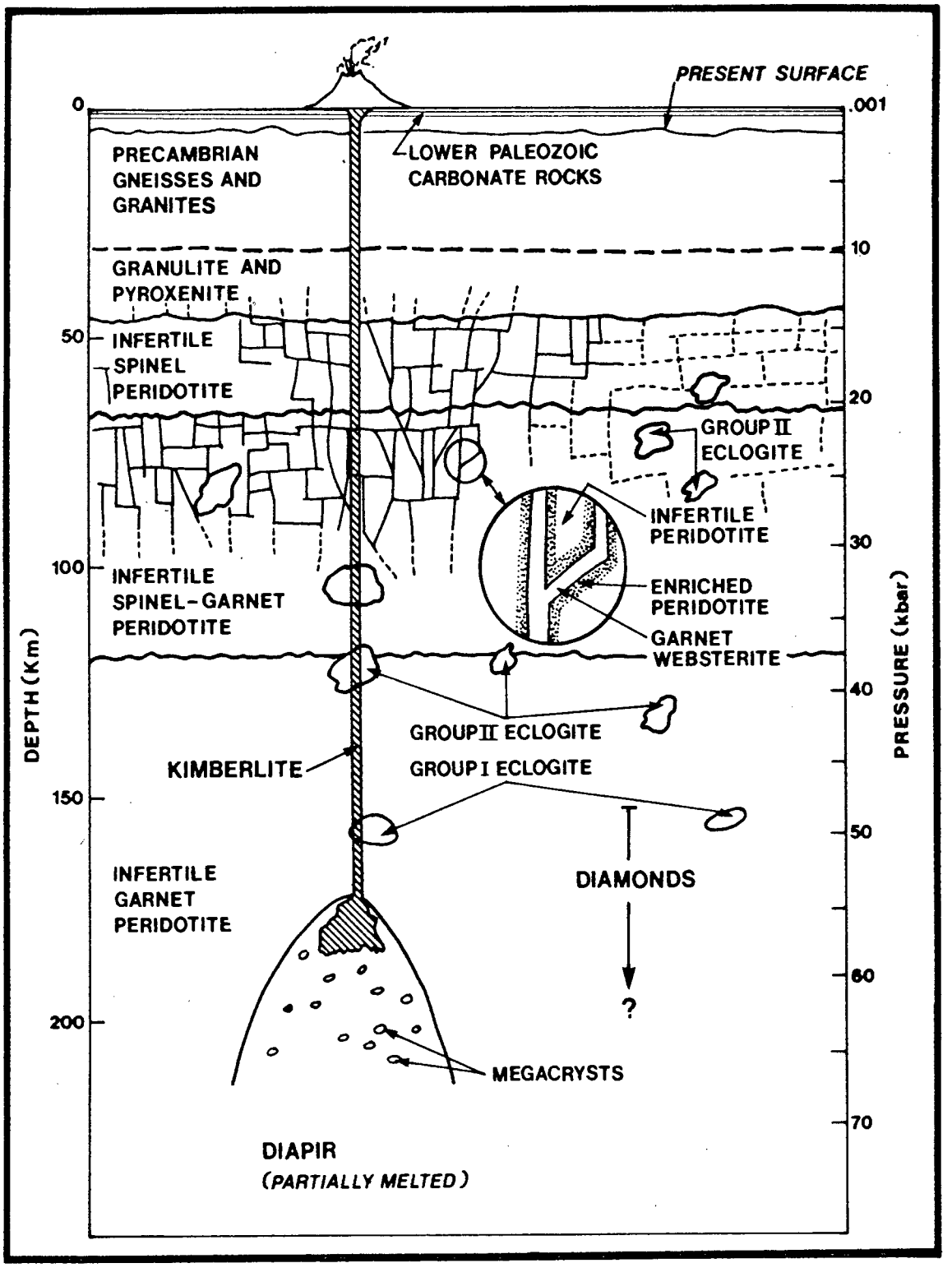


FIGURE 2.3 A schematic cross-section of the Devonian lithosphere beneath Colorado as inferred from the various xenoliths sampled by the Colorado-Wyoming kimberlite occurrences. Modified from Eggler et al. (1979) based on discussion of Eggler et al. (1987). The main addition is the garnet websterite dyke network (detail in inset) which is believed to have been disproportionately sampled by the kimberlite on its journey to the surface.

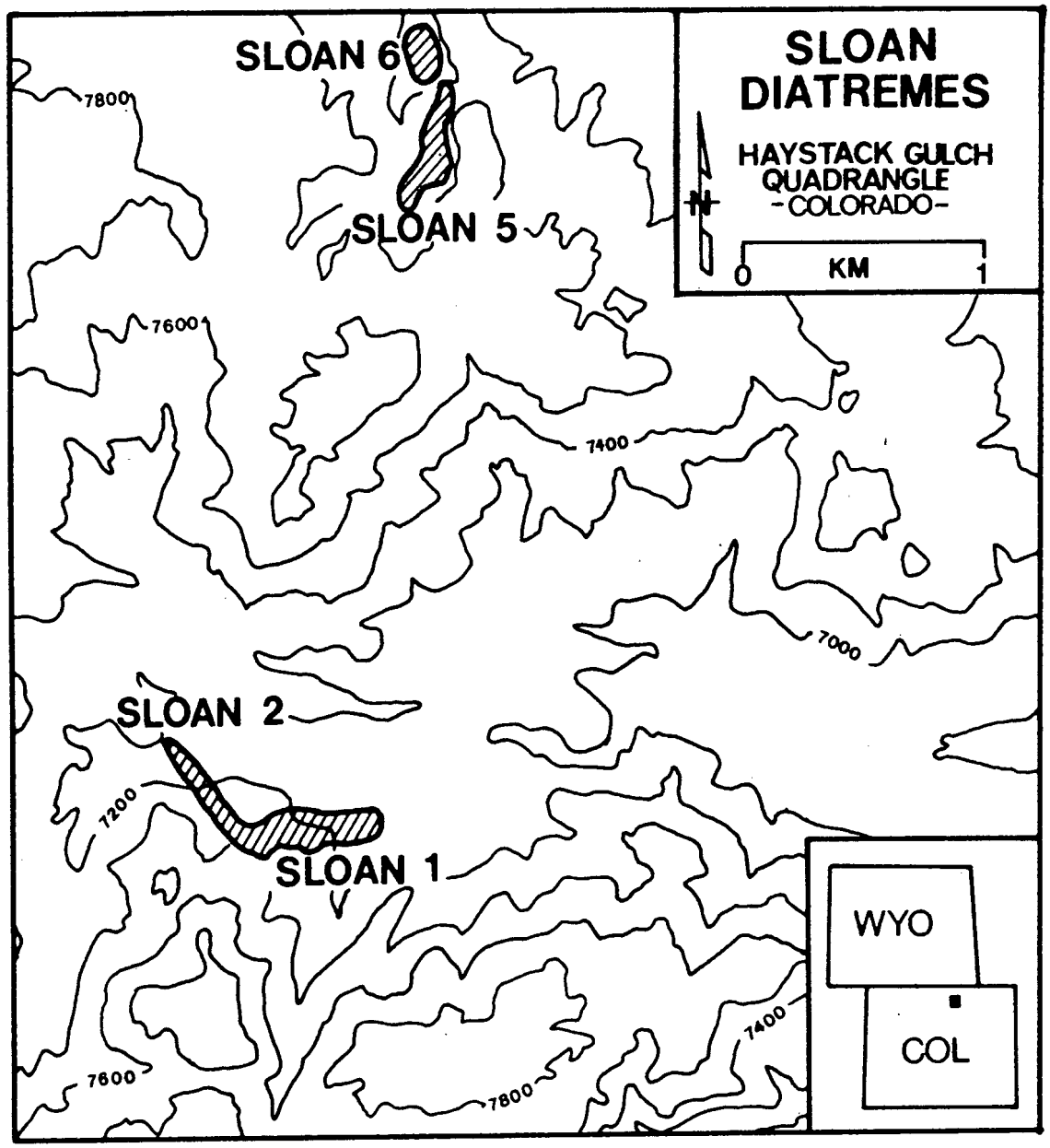
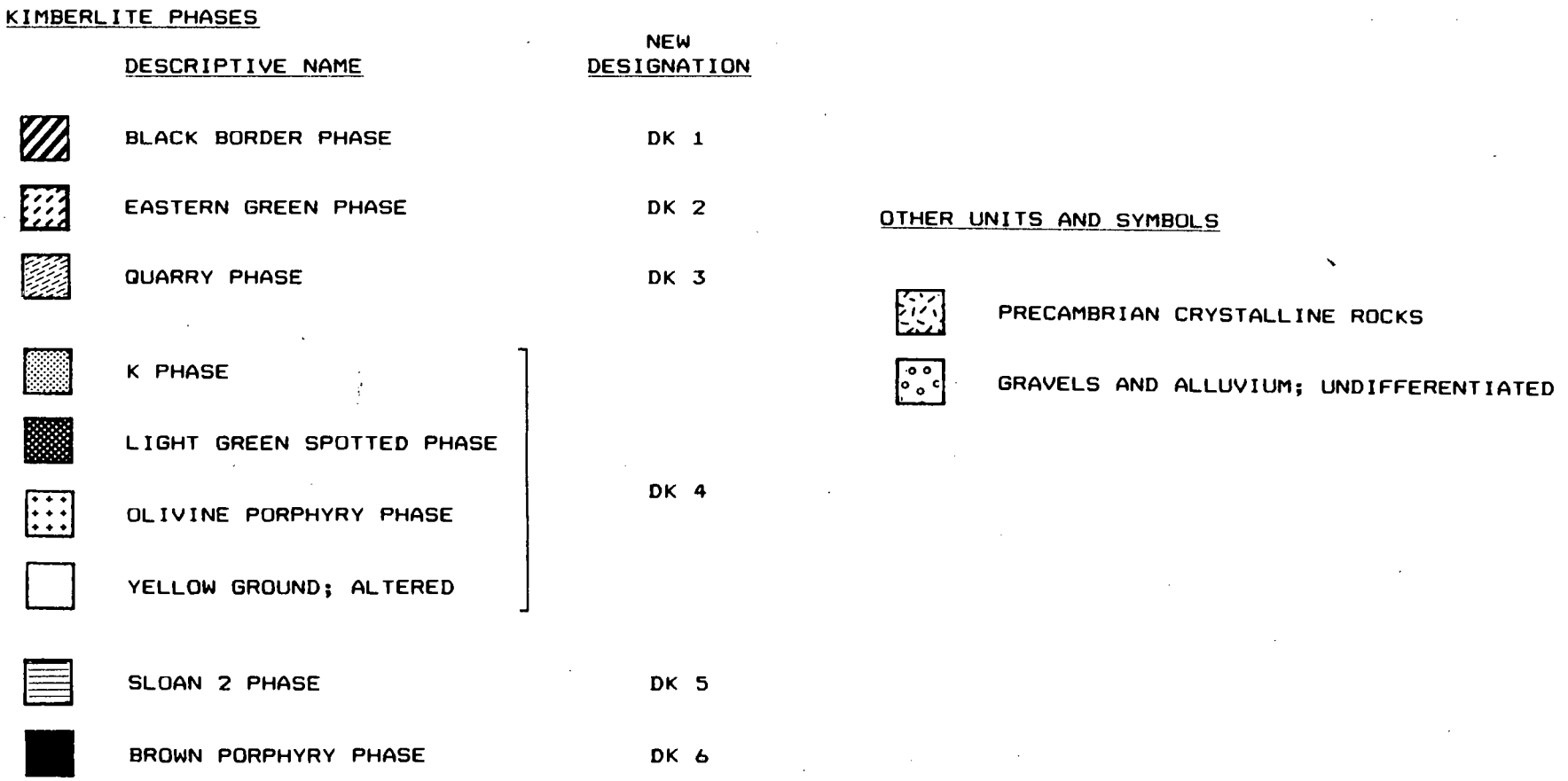


FIGURE 2.4 A locality map (K. Shaver, pers. comm., 1985) showing relative position, shape and areal extent of the Sloan kimberlite diatremes from which the diamonds in this study were derived.

FIGURE 2.5 A geologic map of the Sloan 1 and 2 complex showing the various kimberlite phases (Shaver, 1988). Descriptions of the various phases can be found in Table 2.1.



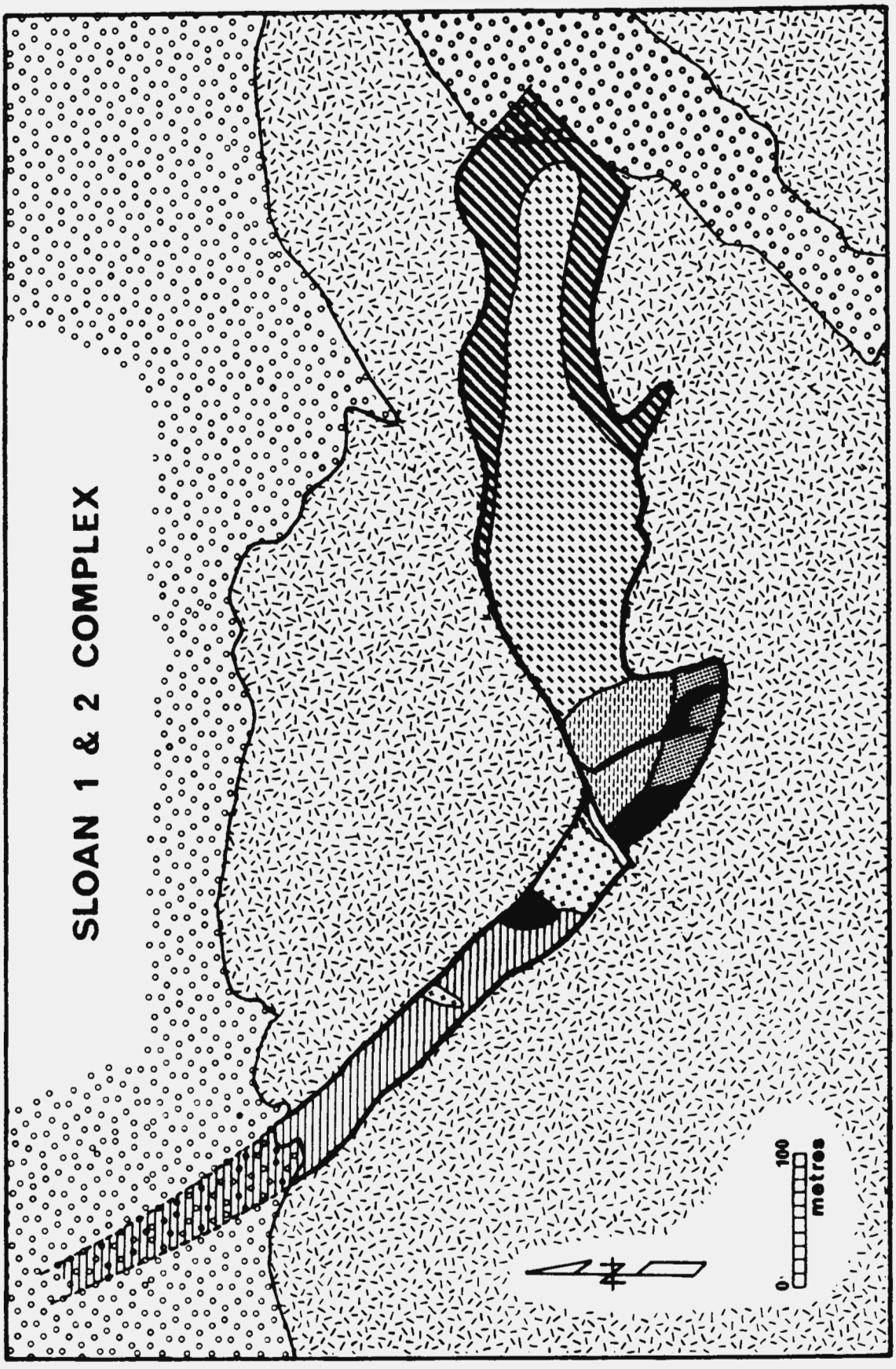
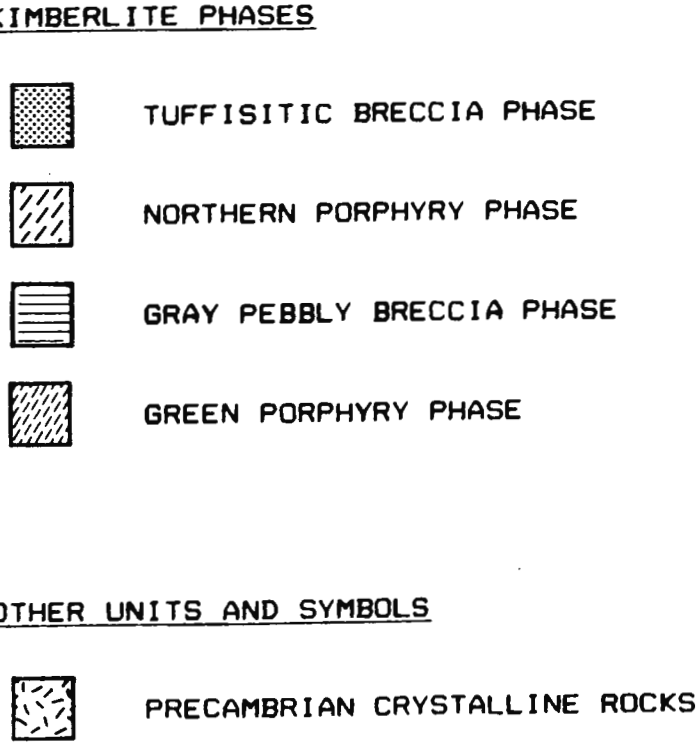
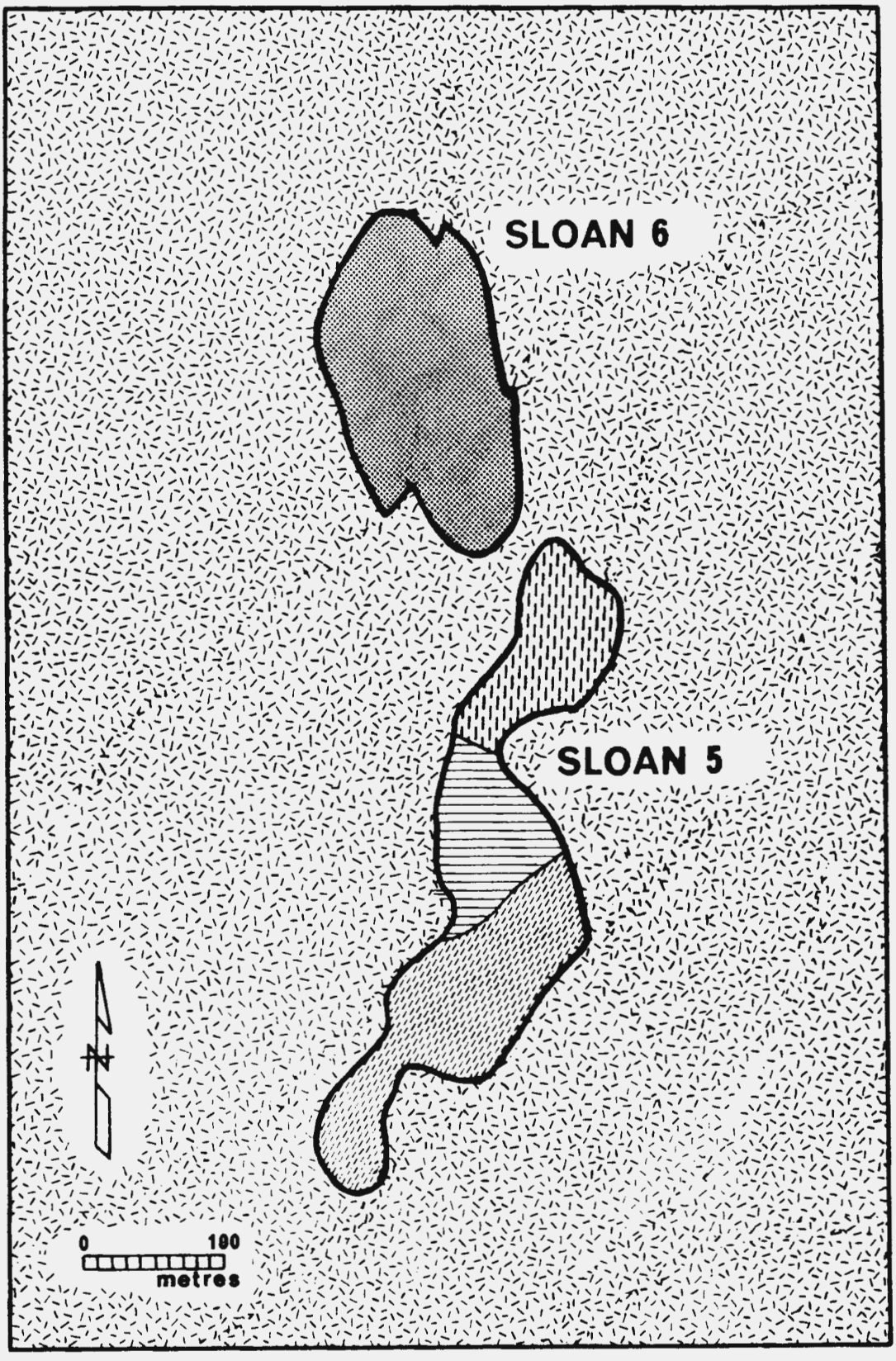

SLOAN 1 & 2 COMPLEX
0
100
metres

FIGURE 2.6 A geological map of Sloan 5 and Sloan 6 diatremes showing the various kimberlite phases present. (K. Shaver, pers. comm., 1985).




SLOAN 6
SLOAN 5
N
0
100
metres

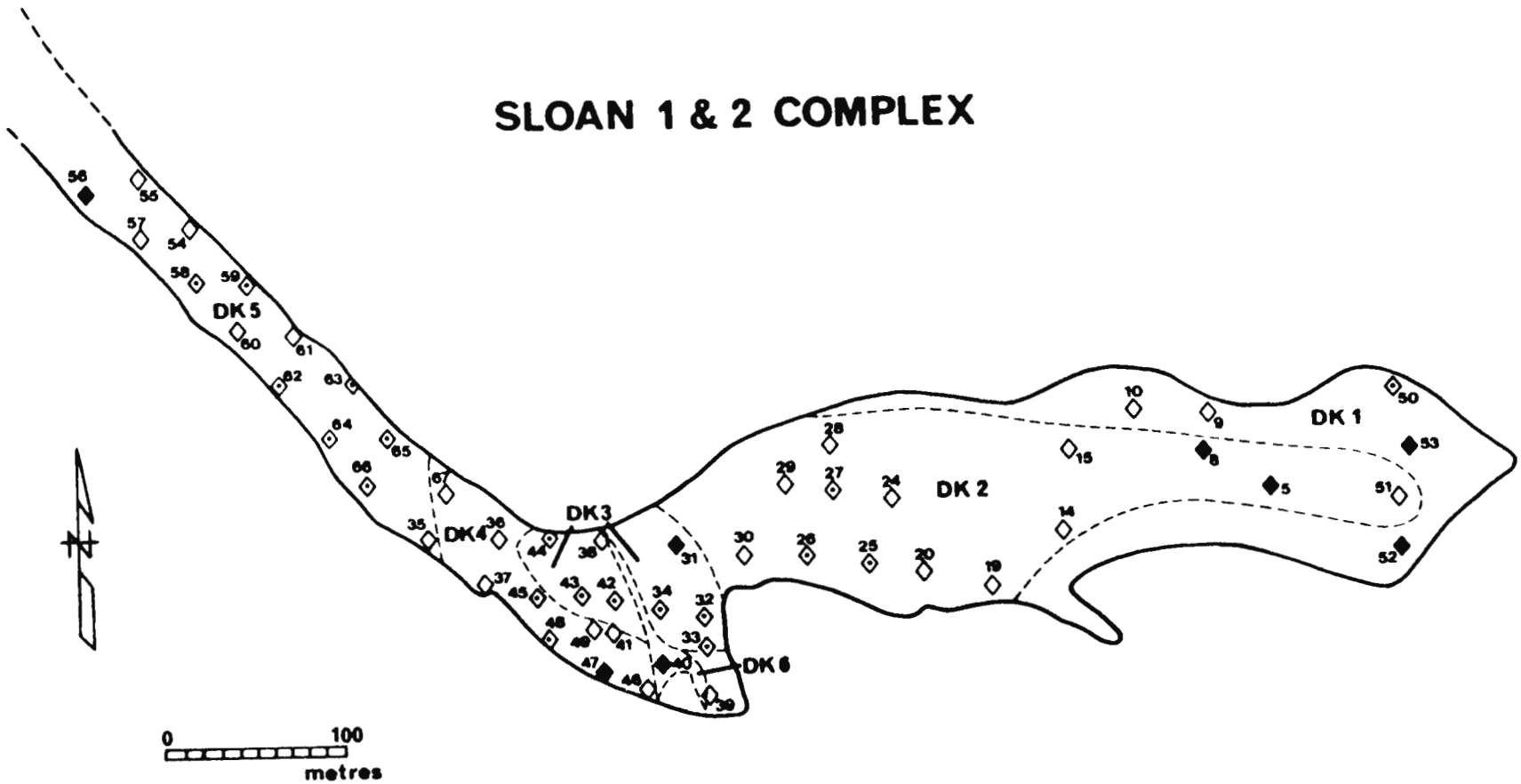


FIGURE 3.1 The position of prospecting test pits (labelled by number) from which the Sloan diamonds were recovered. The kimberlite phases are labelled and demarcated by thin dotted lines. Filled symbols ◆ = pits from which the Representative sample diamonds were derived; partially filled symbols ◈ = pits from which additional Sieved sample diamonds were derived; open symbols ◇ = other pits, some from which Selected sample diamonds were derived.

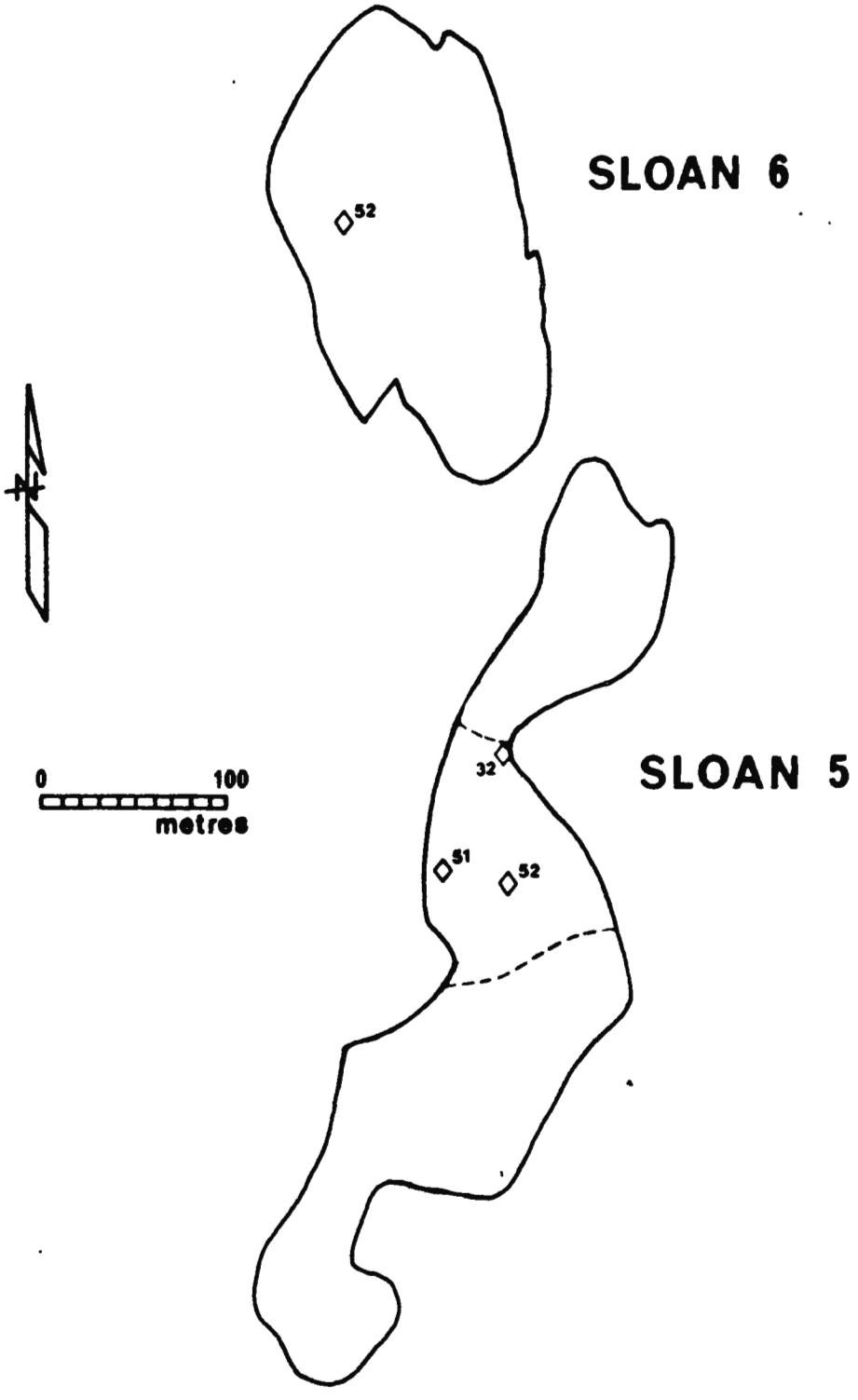


FIGURE 3.2 The position of prospecting test pits in the Sloan 5 and Sloan 6 kimberlite diatremes from which four Selected sample diamonds were derived.

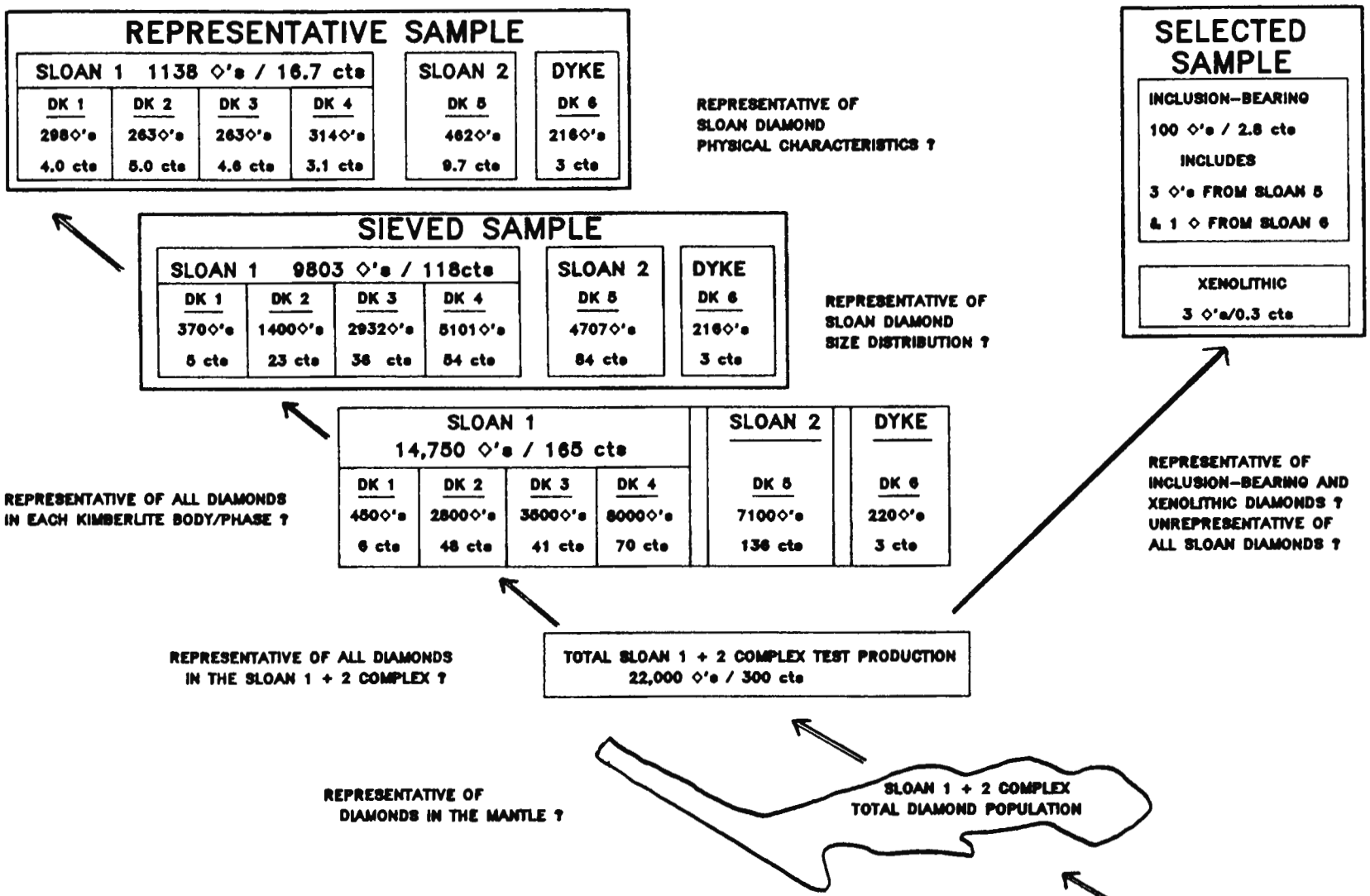


FIGURE 3.3 A flow diagram showing the derivation of the various samples and sub-samples of Sloan diamonds described in this thesis.

FIGURE 3.4 Diamondiferous eclogite 56-6 from Sloan

a) Diamond (lower right) embedded in a garnet of pyrope-almandine composition. Tweezer gap ≈ 5 mm.

b) Detail of (a) showing the macle diamond which exhibits a herring-bone surface pattern. Note that the graphite occurs on the surface of the diamond as well as on the garnet. Width of field ≈ 3.5 mm.

c) Diamond SL 56-6 after removal of associated garnet. Note that the graphite occurs as blebs on the diamond surface rather than as a coat. Note also the irregular octahedral surface. Width of field ≈ 4.2 mm.

d) The reverse side of the diamond as pictured in (c), showing a "resorption channel" (see Section 3.9.1) on the diamond surface which is partially filled with graphite. Width of field ≈ 4 mm.

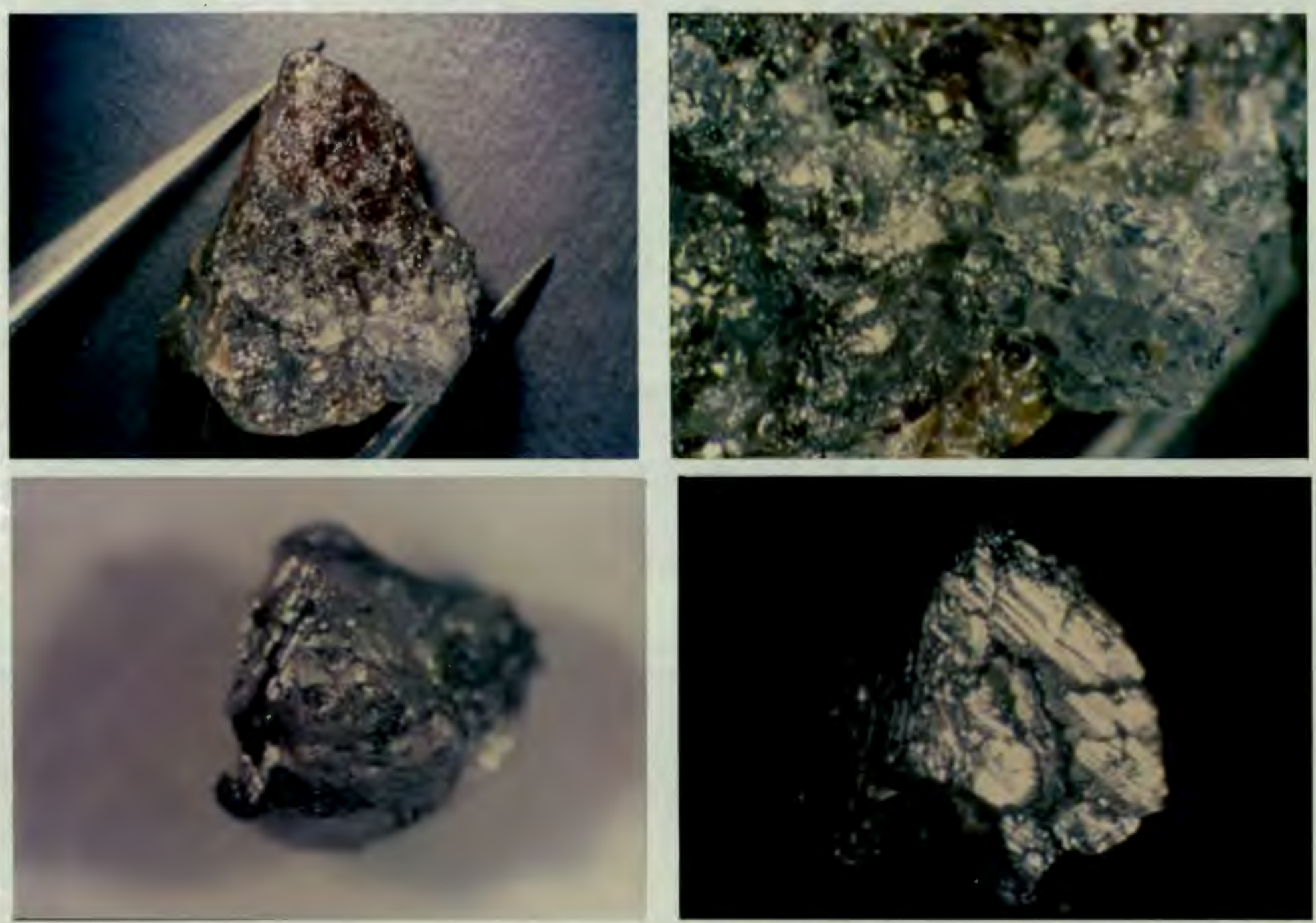

a
b
c
d

FIGURE 3.5 Diamondiferous eclogite 56-7 from Sloan

a) Diamond and associated garnet (lower left) of pyrope-almandine composition. Tweezer gap ≈ 5 mm.

b) Reverse view of (a), showing that the diamond comprises ~ 50% of this "xenolith". Tweezer gap ≈ 5 mm.

c) Diamond SL 56-7 after removal of associated garnet. Note that the graphite occurs as blebs rather than as a coat on the irregular diamond surface. Width of field ≈ 5 mm.

d) Reverse view of (c), showing an inclusion pit on the diamond's broken surface, which suggests that expansion of the included material was responsible for cracking the diamond. Width of field ≈ 5 mm.

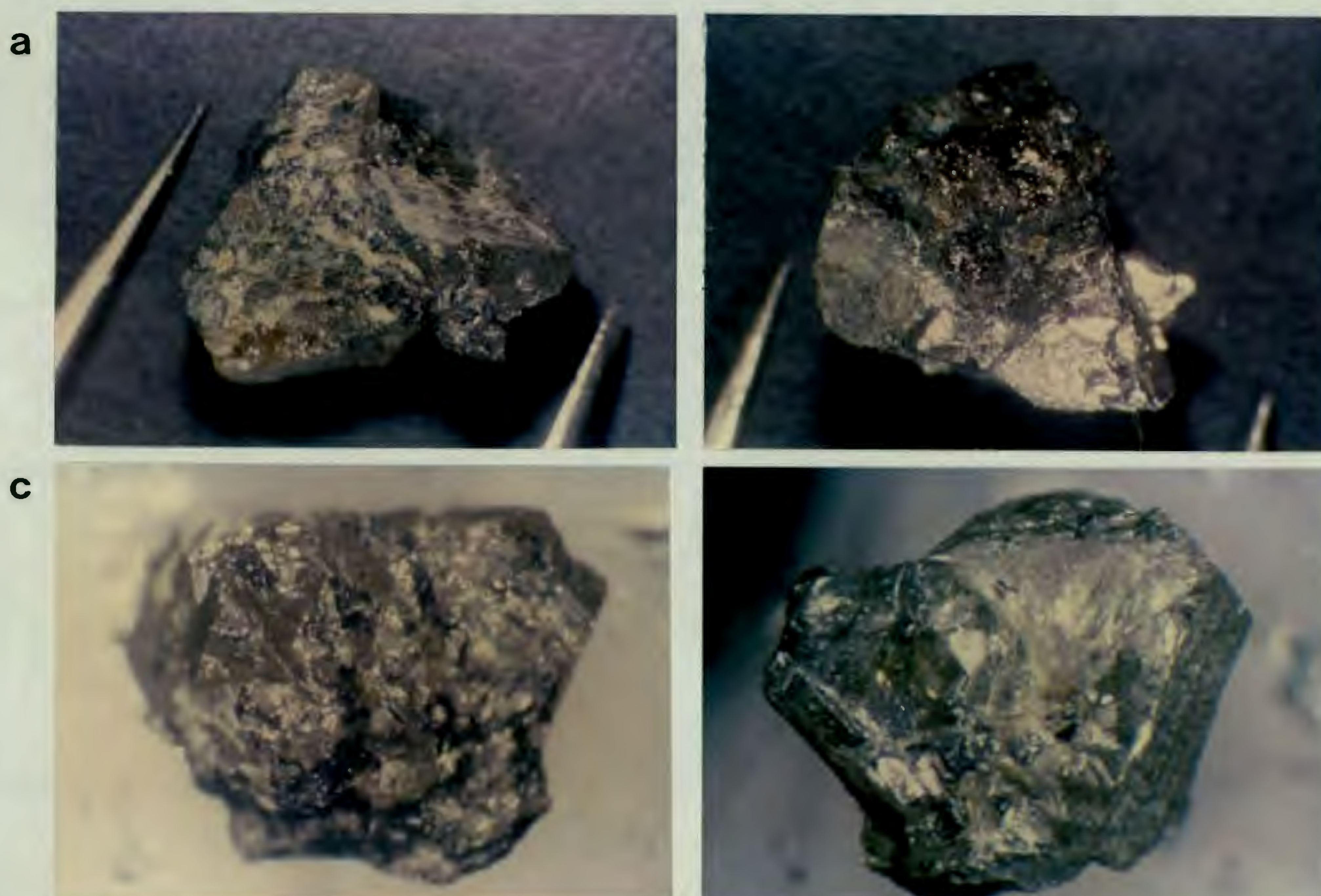

a
b
c
d

FIGURE 3.6 Diamondiferous eclogite 56-8 from Sloan

a) Diamond associated with clinopyroxene (blue-green material lower left), amphibole (orange material) and a large globular graphite mass. Width of field ≈ 5 mm.

b) Reverse view of (a), showing the large diamond (left portion) in contact with the minerals listed in (a). Width of field ≈ 3.5 mm.

c) The aggregate crystal is comprised of a small octahedron embedded in a large spherical diamond mass. Note that the graphite occurs as blebs on the diamond surface. Width of field ≈ 2.5 mm.

d) Reverse view of (c). Width of field ≈ 3 mm.

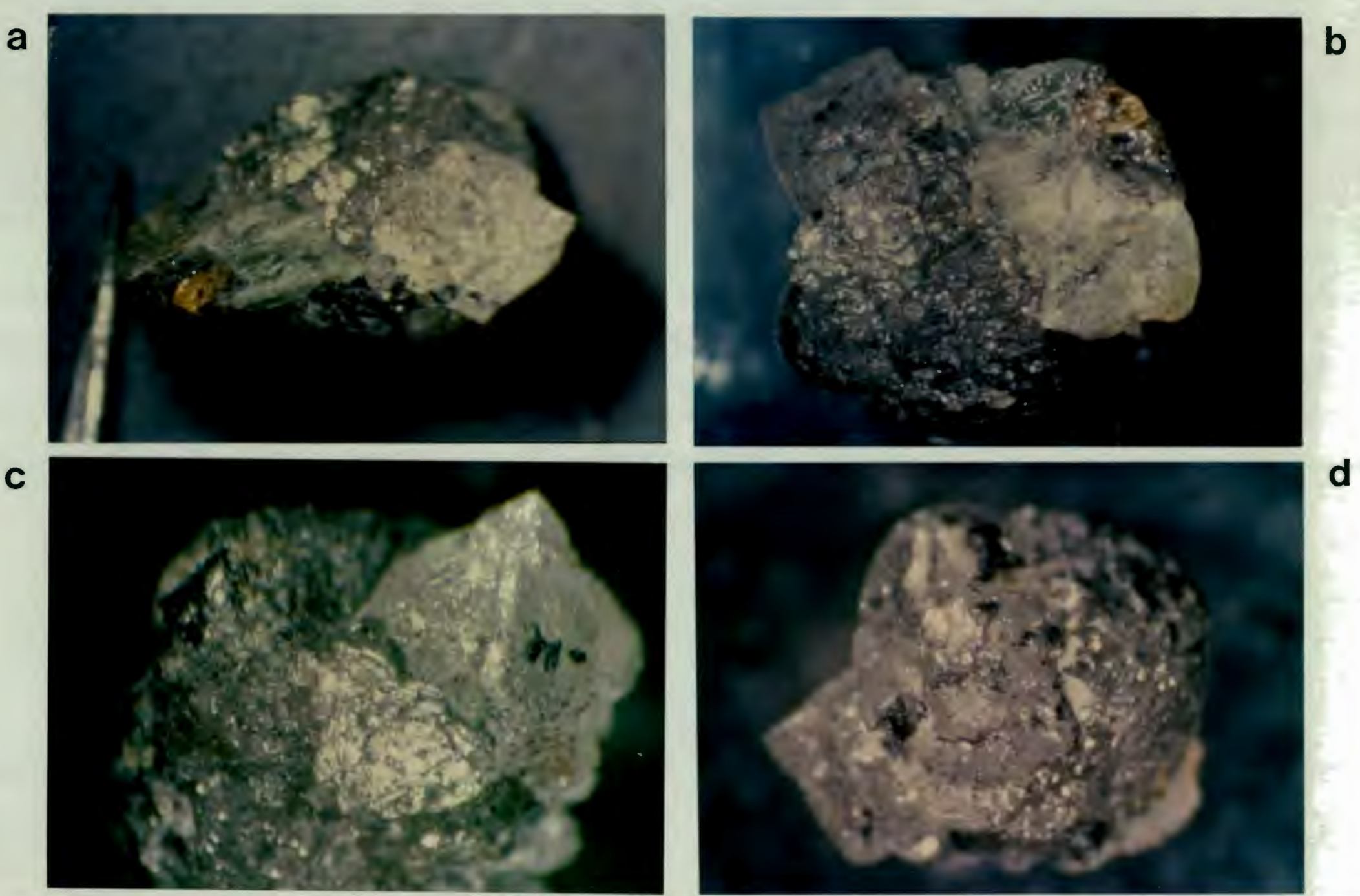

a
b
c
d

FIGURE 3.7 SEM photomicrographs (a-d) and oblique light photograph (e) of diamond SL 52-7 (.015 carat)

a) Whole crystal view showing the crystal's unusual extended pseudo-rhombic dodecahedral form, an irregularly terminated apex (upper left) and a sharp, octahedrally terminated apex (lower right).

b) Detail of sharply terminated octahedral apex showing unresorbed triangular plates and serrate laminae.

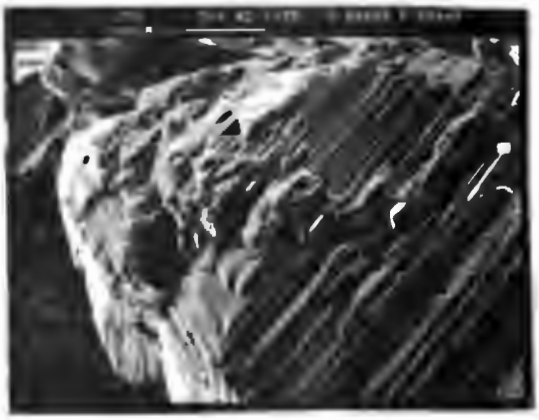
c) Detail of irregularly terminated apex showing knob-like asperities.

d) Detail of serrate laminae on sharply terminated apex.

e) View of whole crystal in oblique light showing a wispy cloud-like inclusion running the entire length of the crystal. Width of field ≈ 3 mm.

a

b



c

d

e

FIGURE 3.8 (a-x) SEM photomicrographs of Sloan diamonds exhibiting various secondary morphologies (as detailed below) which, based on remnant crystal faces as well as other features, are inferred to have primary octahedral growth morphologies.

a) Diamond SL 8-6 (.082 carat) - A resorption category 5 crystal with relatively sharp crystal edges and finely frosted crystal faces (see Figure 3.24f).

b) Diamond SL A5 (<.005 carat) - A resorption category 5 crystal showing sharp crystal edges and relatively smooth crystal faces.

c) Diamond SL 33-8 (.03 carat) - A resorption category 4 crystal with shield-shaped laminae on remnant octahedral faces and low relief, elongate hillocks on the tetrahexahedroidal faces.

d) Diamond SL 24-8 (.016 carat) - A resorption category 4 crystal with one remnant octahedral face exhibiting rounded triangular plates and with tetrahexahedroidal faces exhibiting elongate hillocks.

e) Diamond SL 44-4 (<.005 carat) - A resorption category 3 crystal with smooth remnant octahedral faces and low relief tetrahexahedroidal faces.

f) Diamond SL 34-6 (<.005 carat) - A distorted, resorption category 3 crystal.

g) Diamond SL 67-1 (<.005 carat) - A resorption category 2 crystal with the remnant octahedral faces exhibiting shield-shaped laminae and well-defined terraces.

h) Diamond SL 41-2 (<.005 carat) - A nearly-equidimensional, resorption category 2 crystal.


5KV WD:15MM S 00000 P

a


S 00000 P

b

c


32.5X
500UM
S 00000 P 00012

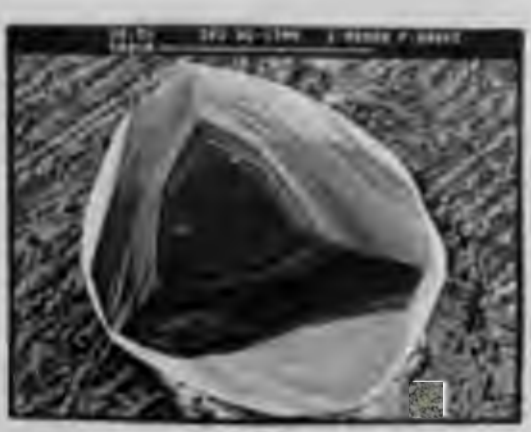
d


5KV WD:14MM S 00000 P:RWBR4

e


105X
200UM
5KV WD 10MM

f



g

h

FIGURE 3.8 (cont.)

i) Diamond SL 37-1 (.01 carat) - A resorption category 1 crystal with no remnant octahedral faces and with poorly defined elongate hillocks on the tetrahexahedroidal faces.

j) Diamond SL 1-21 (.06 carat) - A resorption category 1 crystal with curved low relief tetrahexahedroidal crystal faces. This diamond is of eclogitic affinity as inferred from the composition of an included sulphide (see Chapter 4).

k) Diamond SL 31-2 (.013 carat) - A flattened, resorption category 1 crystal with elongate hillocks on the tetrahexahedroidal faces.

l) Diamond SL 20-4 (.01 carat) - A resorption category 3 crystal which exhibits non-uniform resorption.

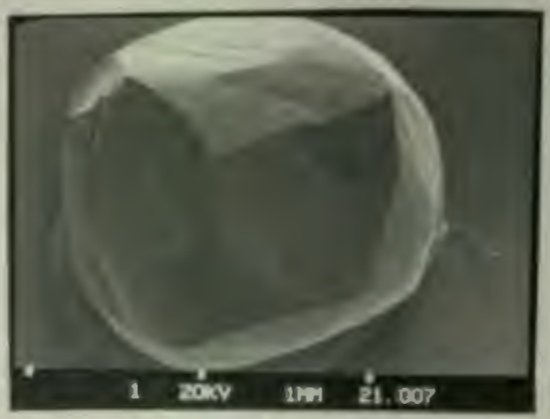
m) Diamond SL 42-1 (.068 carat) - A resorption category 3 crystal which exhibits non-uniform resorption.

n) Diamond SL 64-2 (.008 carat) - A resorption category 3 crystal which exhibits non-uniform resorption.

o) Diamond SL 1 (.01 carat) - A resorption category 3 crystal which exhibits non-uniform resorption.

p) Diamond SL 5-1 (.013 carat) - A resorption category 3 crystal which exhibits non-uniform resorption.

i

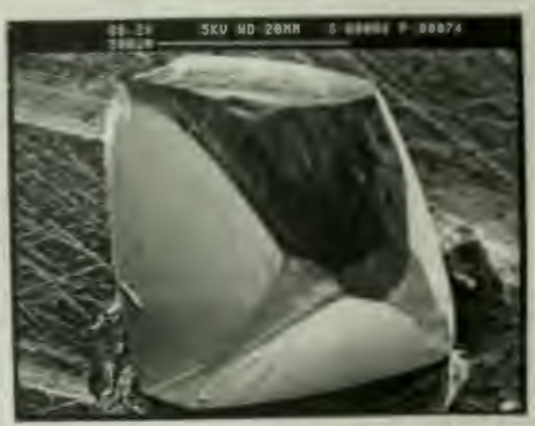


j

k

l

m



n

o

p

FIGURE 3.8 (cont.)

q) Diamond SL 33-2 (<.005 carat) - A complex octahedron with a category 4 resorption morphology.

r) Diamond SL 5-2 (.023 carat) - A complex octahedron with a category 5 resorption morphology.

s) Diamond SL 28-1 (.01 carat) - A complex octahedron with a category 5 resorption morphology and with a poorly defined pseudo-rhombic dodecahedral crystal face (top).

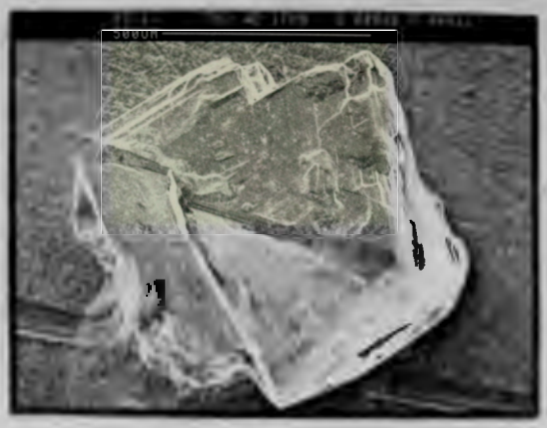
t) Diamond SL 58-2 (.005 carat) - A complex octahedron with a category 5 resorption morphology.

u) Diamond SL 40-3 (.018 carat) - A complex octahedron with a category 5 resorption morphology and with pseudo-rhombic dodecahedral crystal faces.

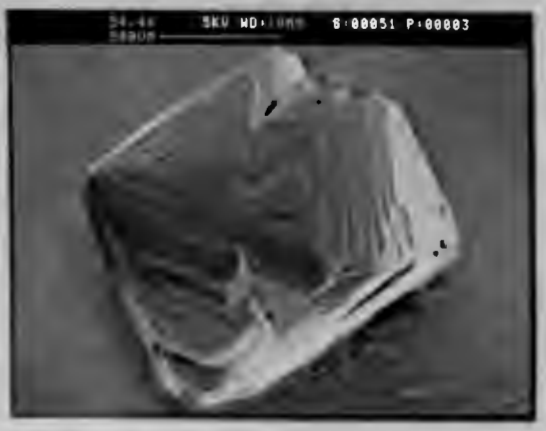
v) Diamond SL 34-9 (.015 carat) - A complex octahedron with a category 5 resorption morphology. The embayed portion of this crystal possibly represents previously intergrown mineral material.

w) Diamond SL 34-12 (.052 carat) - A complex octahedron with a category 5 resorption morphology, pseudo-rhombic dodecahedral crystal faces and associated knob-like asperities.

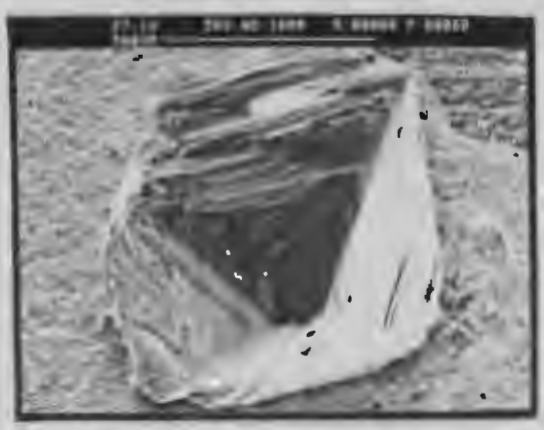
x) Diamond SL 41-7 (.029 carat) - A complex octahedron with a category 5 resorption morphology and a pseudo-rhombic dodecahedral form.



q


5KV WD:10MM S:00051 P:00003

r



s

t


10KV WD:10MM S:00000 P:00019

u


WD:19MM S 00000 P

v

w

x

FIGURE 3.9 SEM photomicrographs of Sloan diamonds which crystallized as a single crystal cube or cubo-octahedra.

a) Diamond SL 40-6 (.068 carat) - A cuboid crystal of unknown resorption category. Note the hopper shape which is typical of natural cubic diamonds.

b) Detail of (a), showing surface of resorbed cubic crystal face which exhibits negatively-oriented tetragonal etch pits.

c) Diamond SL 65-1 (.023 carat) - A cubo-octahedron with a category 2 resorption morphology. Note the minor cube faces at the apices of this crystal and the associated crescentic steps at the lower left apex.

d) Detail of (c), showing a cube face as identified by the presence of negatively-oriented, tetragonal etch pits.

e) Diamond SL 48-4 (.029 carat) - A cubo-octahedron with a category 4 resorption morphology.

f) Detail of (e), showing negatively-oriented, tetragonal etch pits on the resorbed cubic faces.

g) Diamond SL 36-1 (<.005 carat) - A rare sharp-edged cubo-octahedron (resorption category 5). The apex on the left most closely approximates the {100} cube face, whereas those at the top and in the foreground appear to be transitional between the cube and octahedral planes.

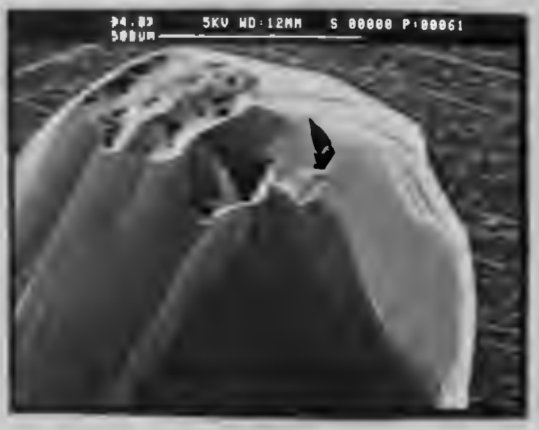
h) Detail of (g), showing the sharp-edged {100} cube face.

a


295X 15KV WD:35M P 00038
100UM

b

c


94.0 5KV WD:12MM S 00000 P:00061
500UM

d


5KV WD:10MM S 00000 P:00033

e

f

g


P 00019

h

FIGURE 3.10 SEM photomicrographs of Sloan diamonds which crystallized as macle twins.

a) Diamond SL 27-6 (<.005 carat) - A resorption category 5 crystal of peridotitic affinity as confirmed from included garnet and olivine compositions (see Figure 3.30 and Chapter 4).

b) Diamond SL 27-1 (.018 carat) - A resorption category 5 crystal showing slightly rounded triangular plates.

c) Diamond SL 32-5B (<.005 carat) - A resorption category 5 crystal.

d) Diamond SL 32-5C (<.005 carat) - A resorption category 5 crystal exhibiting sharp-edged and smooth-faced triangular plates.

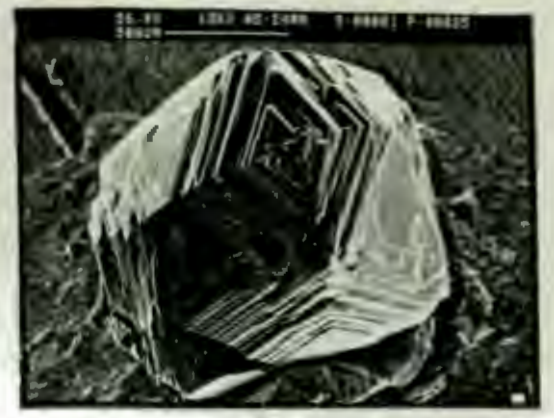
e) Diamond SL 24-2 (.152 carat) - A resorption category 5 crystal with smooth octahedral faces as well as pseudo-rhombic dodecahedral faces.

f) Diamond SL 32-5J (<.005 carat) - A star macle with a category 5 resorption morphology.

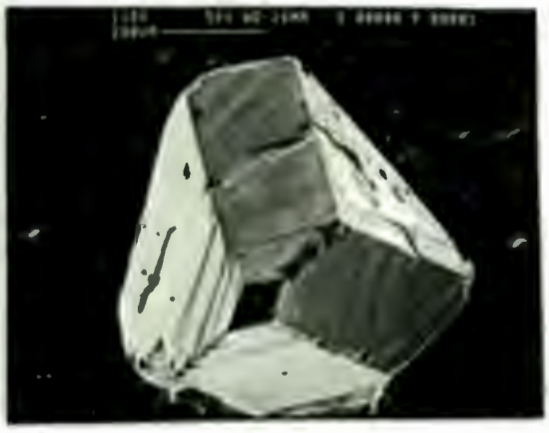
g) Diamond SL 1-18 (.65 carat) - A large resorption category 3 crystal with flat-bottomed trigonal etch pits on the remnant octahedral crystal face.

h) Diamond SL 1-16 (.06 carat) - A resorption category 1 crystal. The macle structure is revealed by the herring-bone pattern resulting from resorption on the macle twin line. This diamond is of eclogitic affinity as confirmed from included clinopyroxene composition (see Chapter 4).

a



b

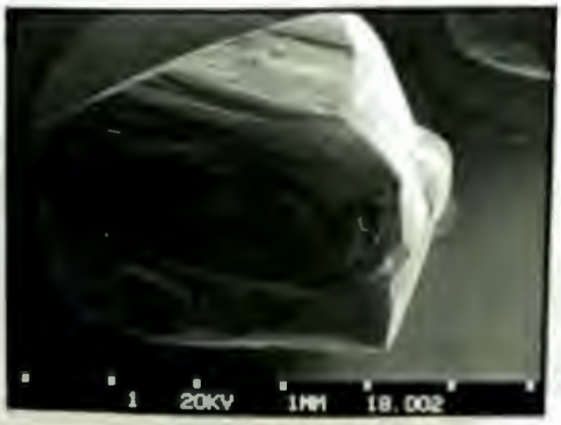


c

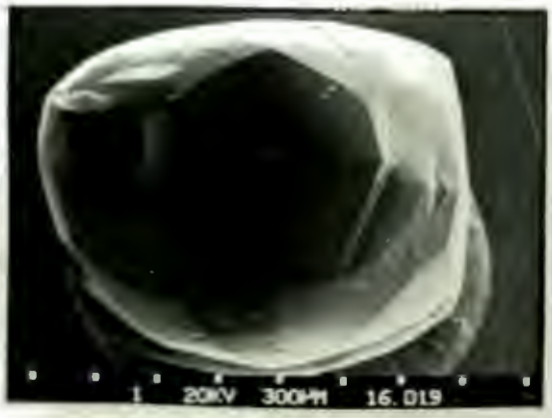
d

e

f



g



h

FIGURE 3.11 SEM photomicrographs of Sloan diamonds which crystallized as simple aggregates.

a) Diamond SL 34-3 (.005 carat) - Two octahedral crystals forming a simple aggregate with a resorption category 5 morphology and with sharp edges and smooth faces.

b) Diamond SL 27-7 (<.005 carat) - Two octahedral crystals, one of complex form, which are combined into a simple aggregate having a category 5 resorption morphology.

c) Diamond SL 48-6 (<.005 carat) A simple aggregate composed of two stepped octahedral crystals, one of which is nearly overgrown by the other. This aggregate has a category 5 resorption morphology.

d) Detail of (c).

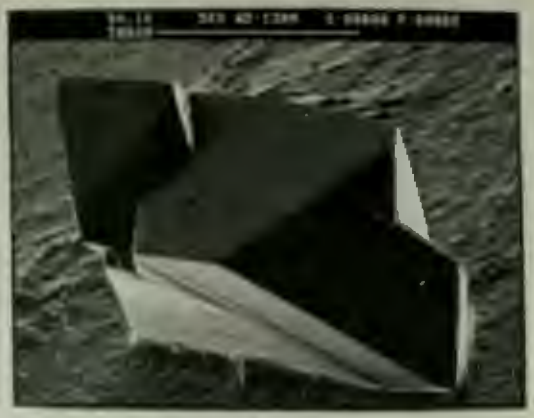
e) Diamond SL 32-5G (<.005 carat) - Four octahedral crystals combined into a simple aggregate. This minute aggregate has a category 5 resorption morphology.

f) Diamond SL 9-1 (.016 carat) - Three octahedral crystals combined into a simple aggregate and having a category 5 resorption morphology (see Figure 3.23 k,l).

g) Diamond SL 40-7 (.01 carat) - Two octahedral crystals forming a simple aggregate with a category 5 resorption morphology.

h) Diamond SL 35-5 (<.005 carat) - Three octahedral crystals combined into a simple aggregate with a category 4 resorption morphology.

a



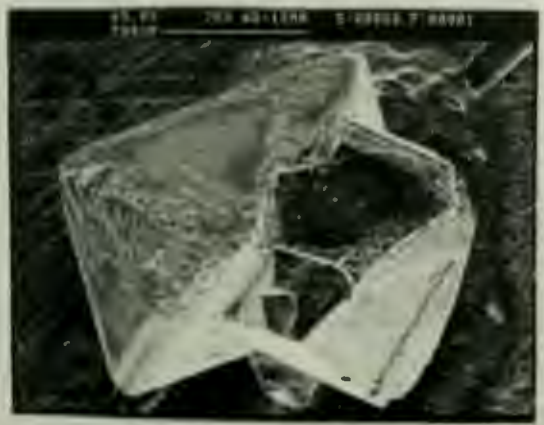
b

c

d

e

f



g

h

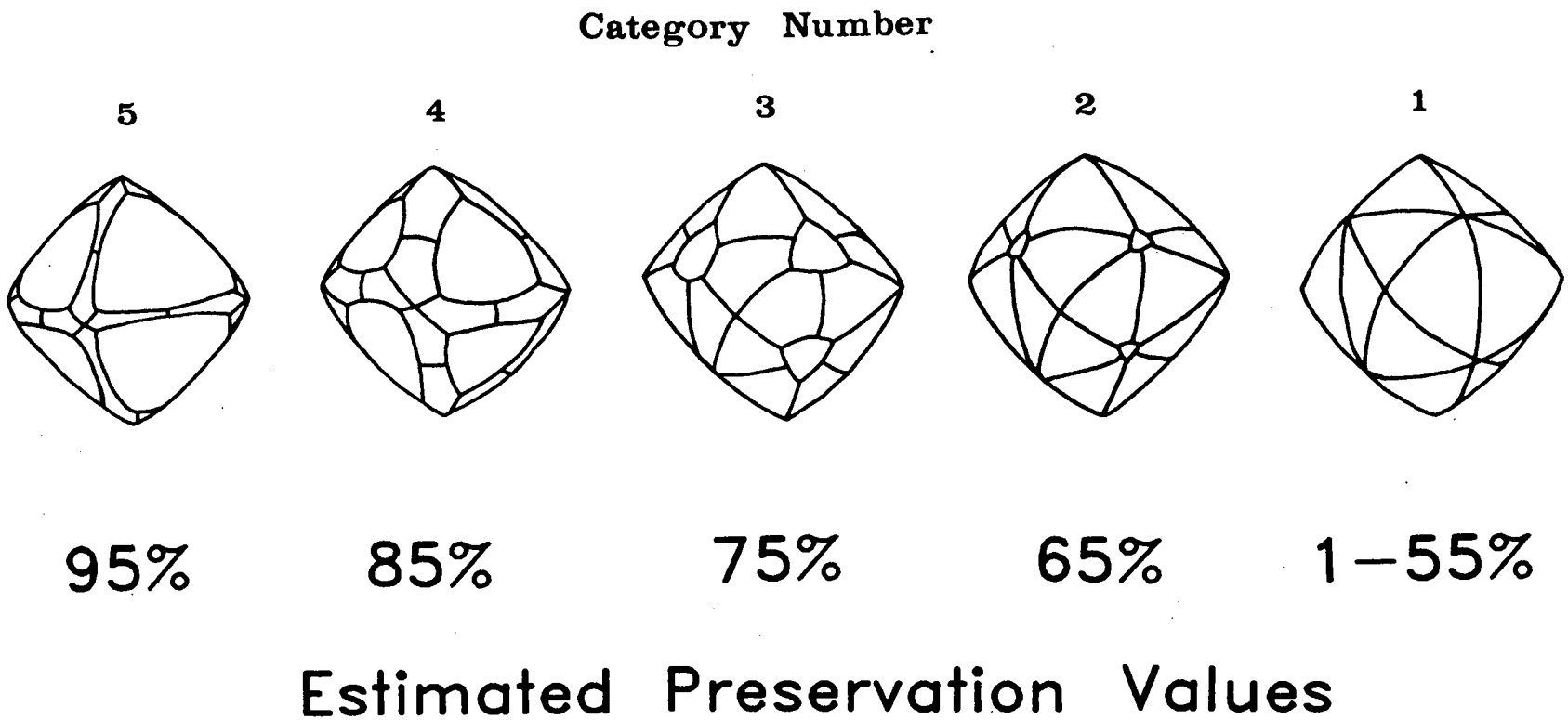


FIGURE 3.12 A classification scheme devised by D.N. Robinson (pers. comm., 1984) that estimates percentage preservation for transitional diamond forms resulting from the conversion of an octahedron to a tetrahexahedron during resorption. Category numbers increase with increasing preservation.

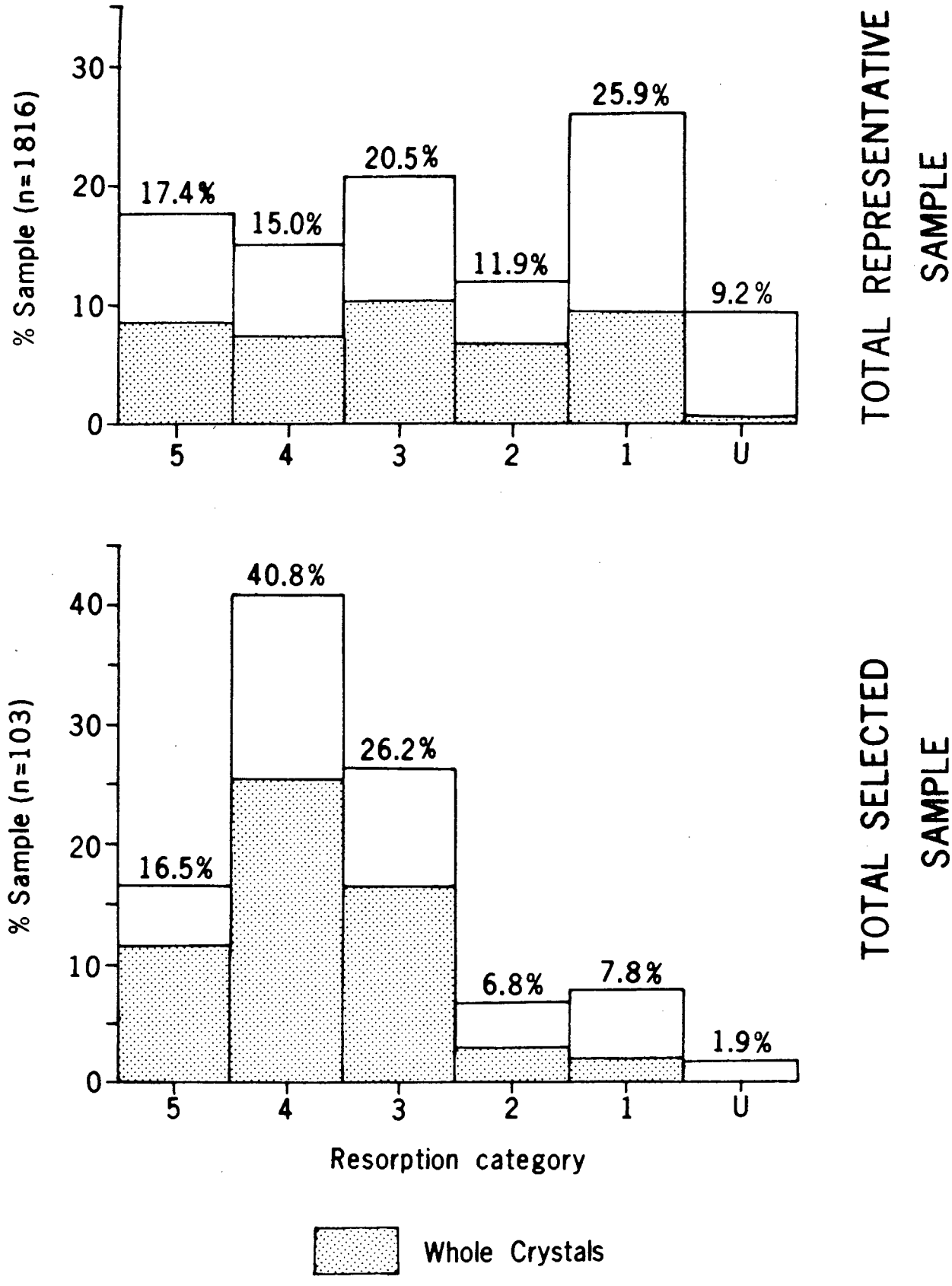


FIGURE 3.13 Percentage of diamonds in each resorption morphology category for the total Representative and Selected samples of Sloan diamonds. The whole crystal subsamples of both samples are also shown.

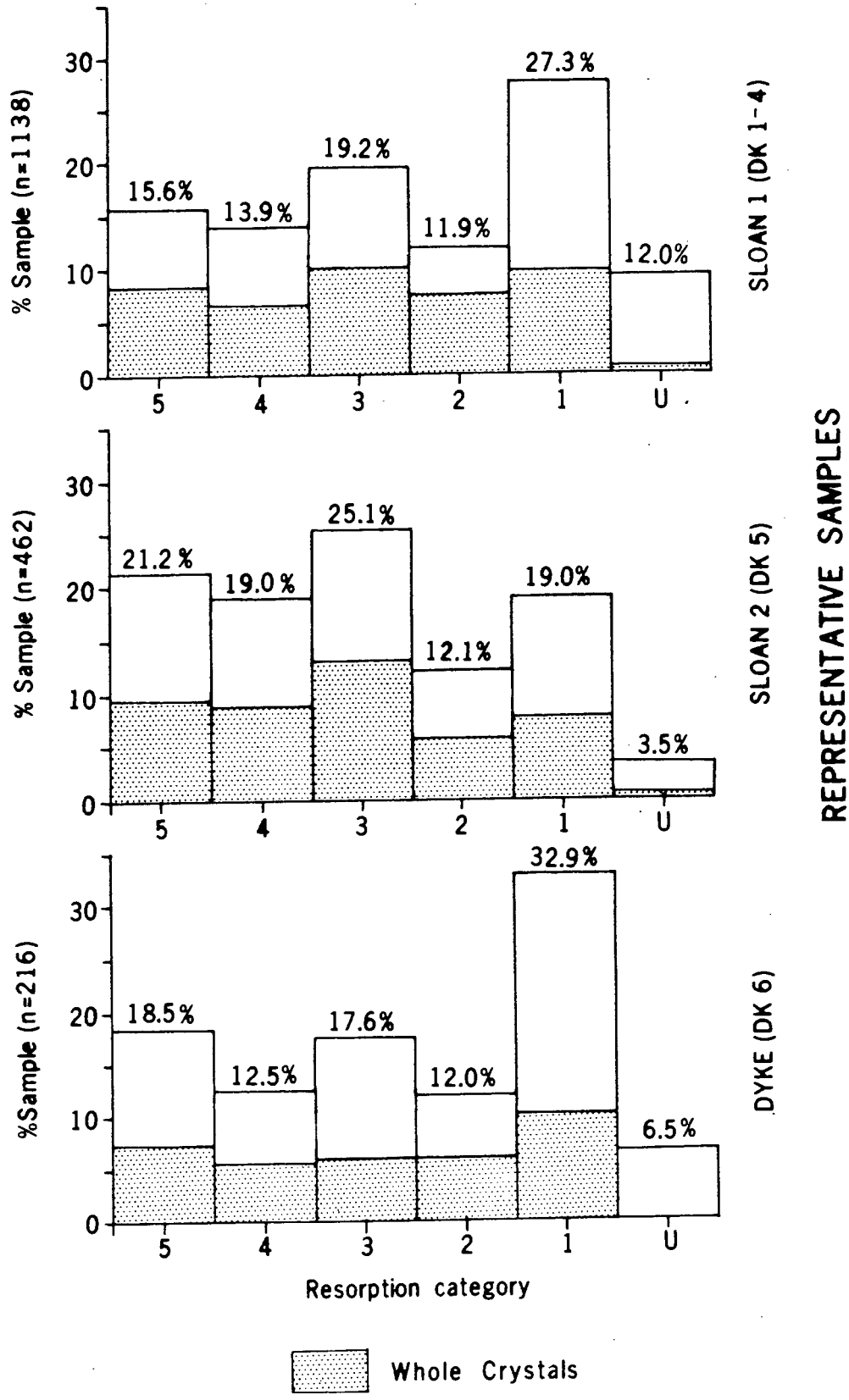


FIGURE 3.14 Percentage of diamonds in each resorption morphology category for the Sloan 1, Sloan 2 and Dyke kimberlite body subsamples of the Representative sample of Sloan diamonds. The whole crystal subsamples of each body are also shown.

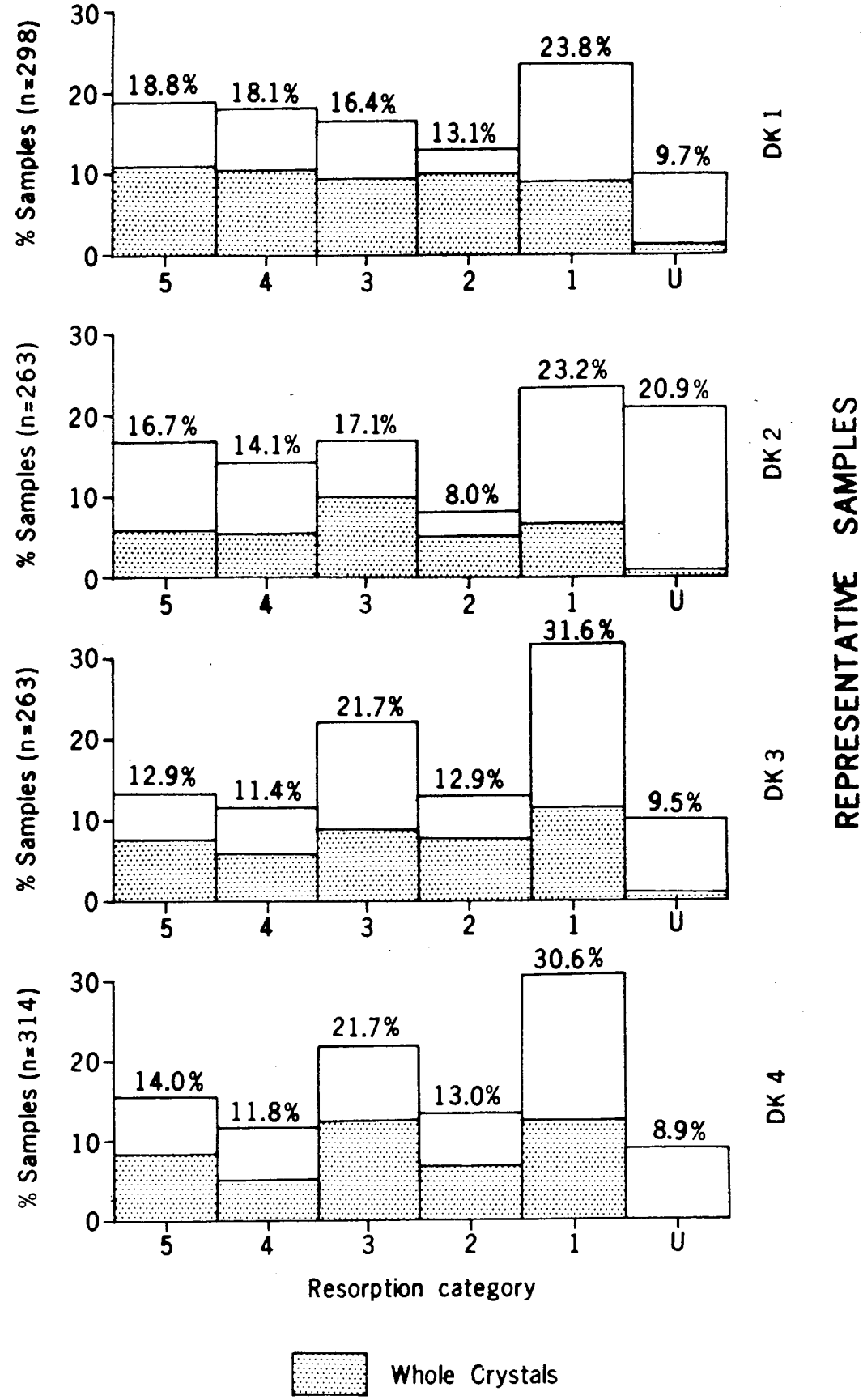


FIGURE 3.15 Percentage of diamonds in each resorption morphology category for each of the DK1-4 kimberlite phase subsamples in the Representative sample of Sloan diamonds. The whole crystal subsamples of each phase are also shown.

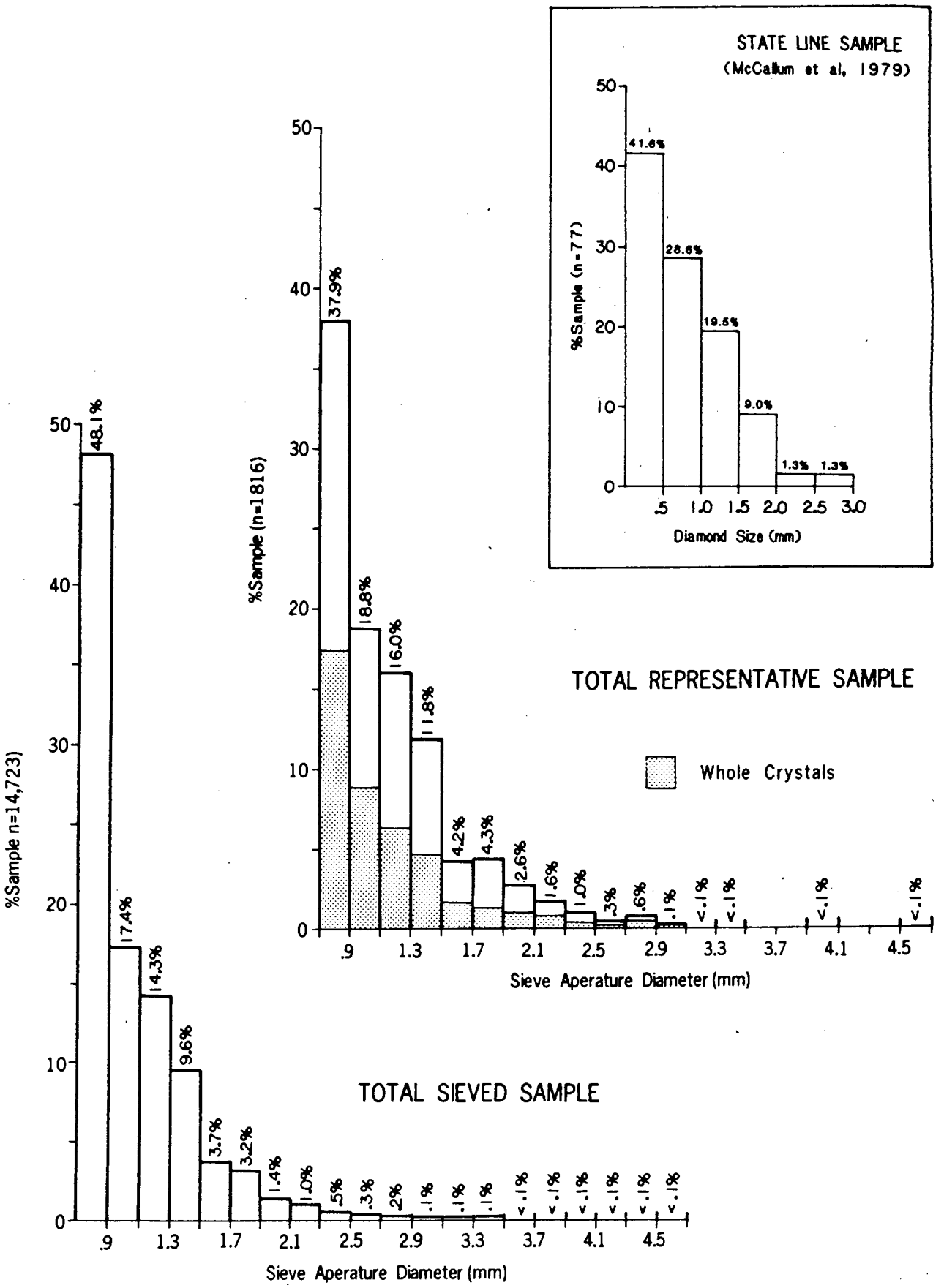


FIGURE 3.16 Percentage of diamonds in each sieve class (plotted between appropriate sieve aperture diameters) for the total Sieved and Representative samples, as well as the State Line sample (McCallum et al., 1979). The whole crystal subsample of the Representative sample is also shown.

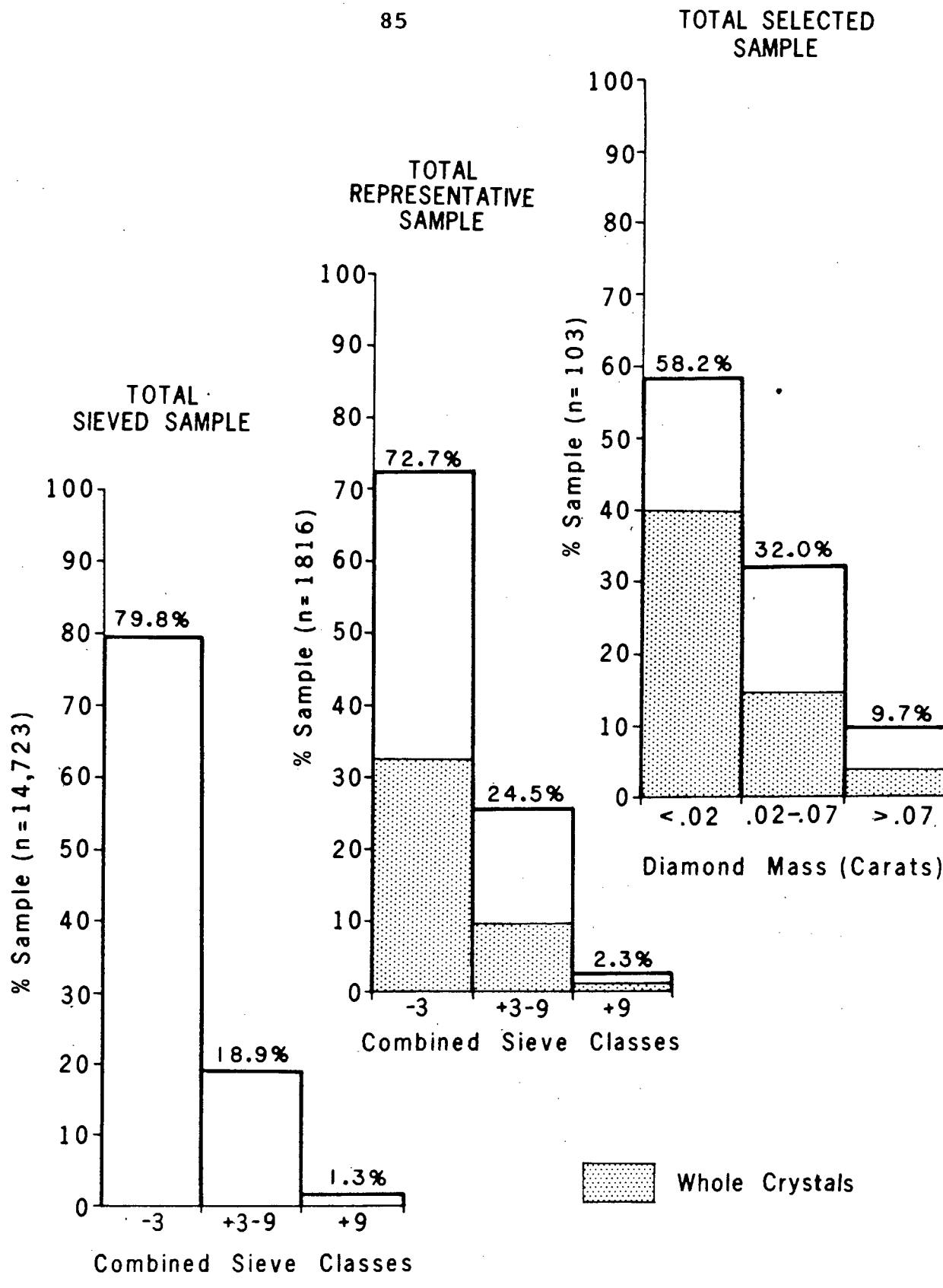


FIGURE 3.17 Percentage of Sieved and Representative sample diamonds occurring in each combined sieve class along with a plot showing the percentage of Selected sample diamonds in corresponding combined mass classes. The whole crystal subsamples of the Representative and Selected samples are also shown.

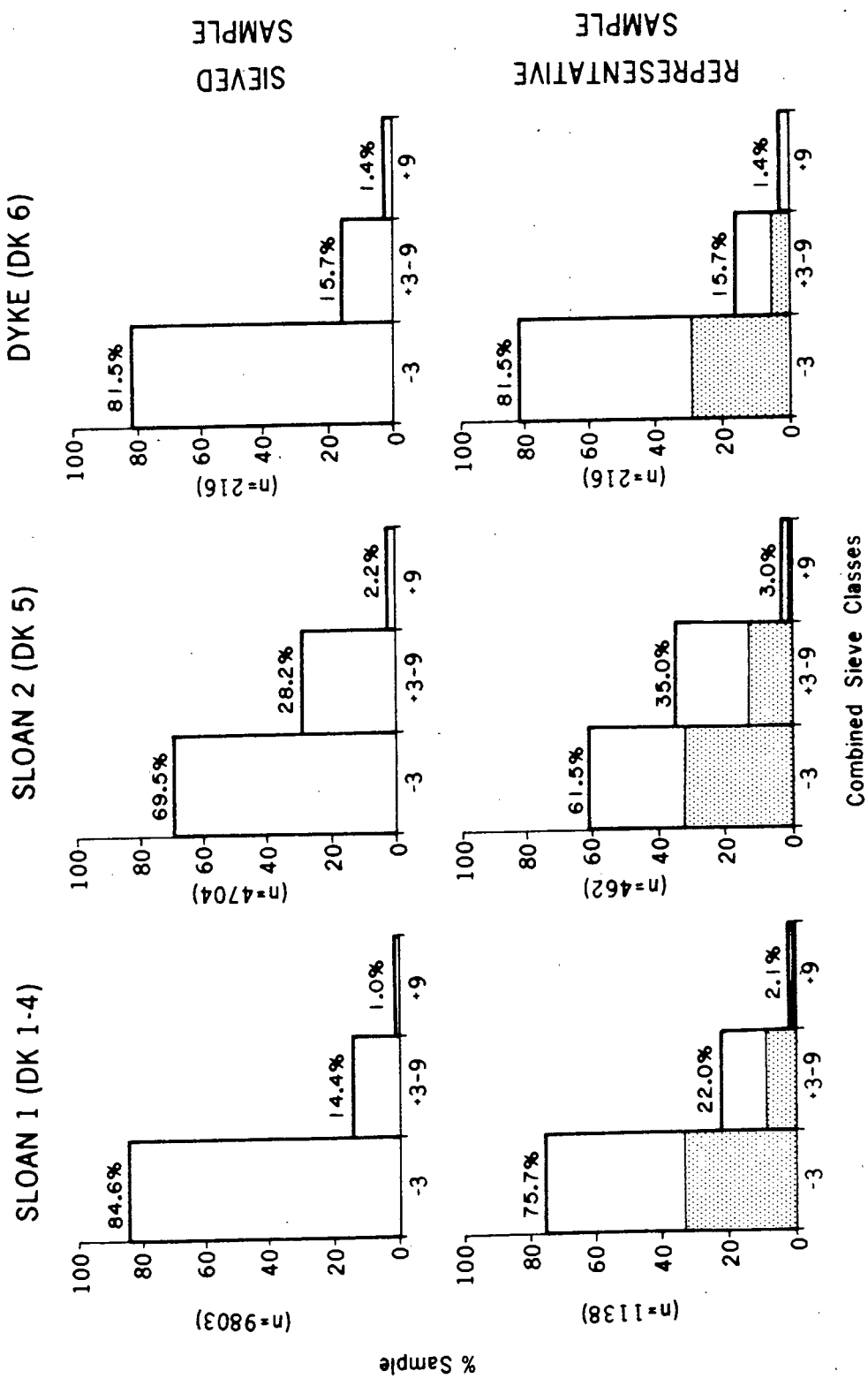


FIGURE 3.18 Percentage of Sieved sample and Representative sample diamonds in combined sieve classes for the Sloan 1, Sloan 2 and Dyke kimberlite body subsamples. The Dyke body subsample is the same for both samples. The whole crystal subsamples of the Representative sample are also shown.

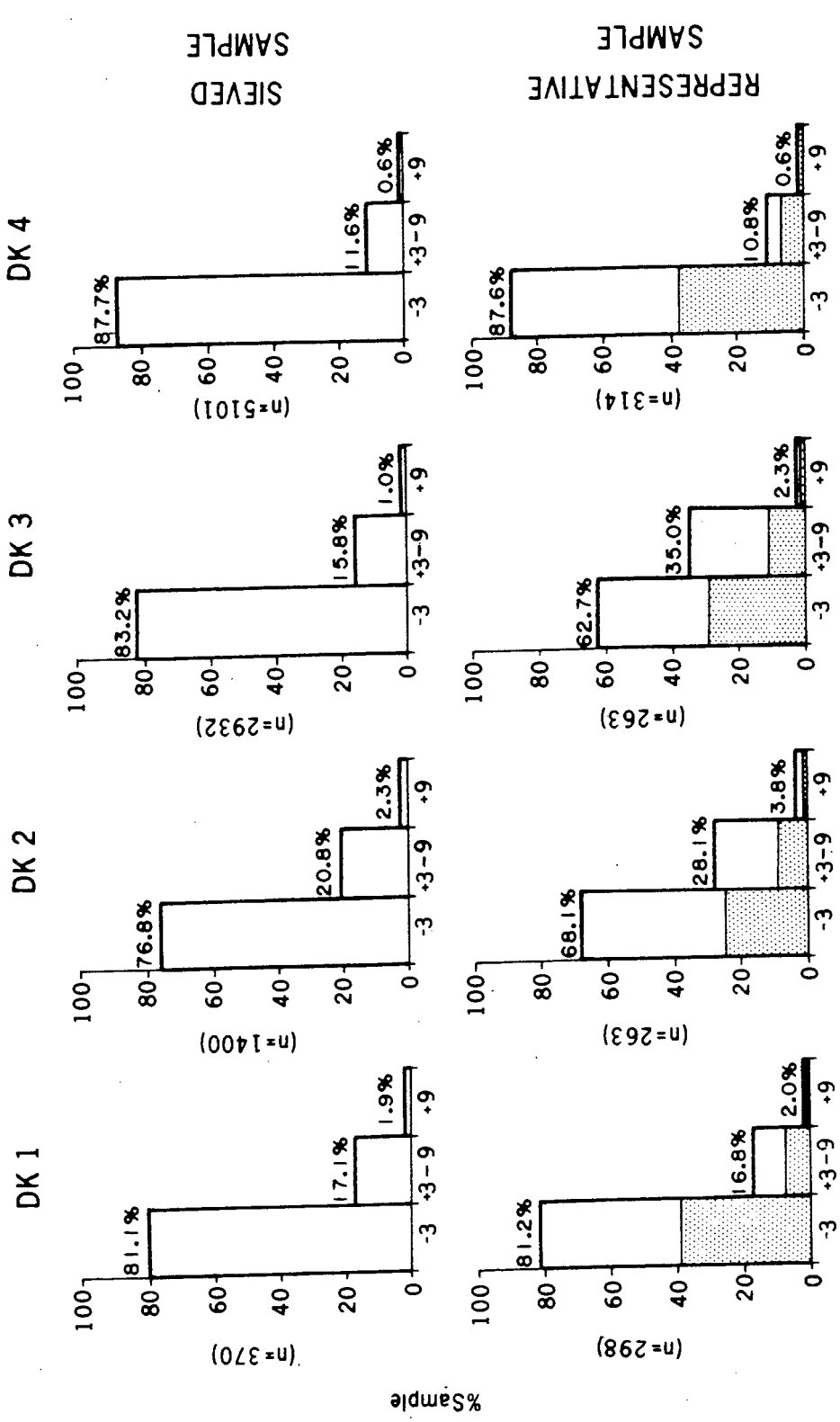


FIGURE 3.19 Percentage of Sieved sample and Representative sample diamonds in combined sieve classes for the DK1-DK4 kimberlite phase subsamples. The whole crystal subsamples of the Representative sample are also shown.

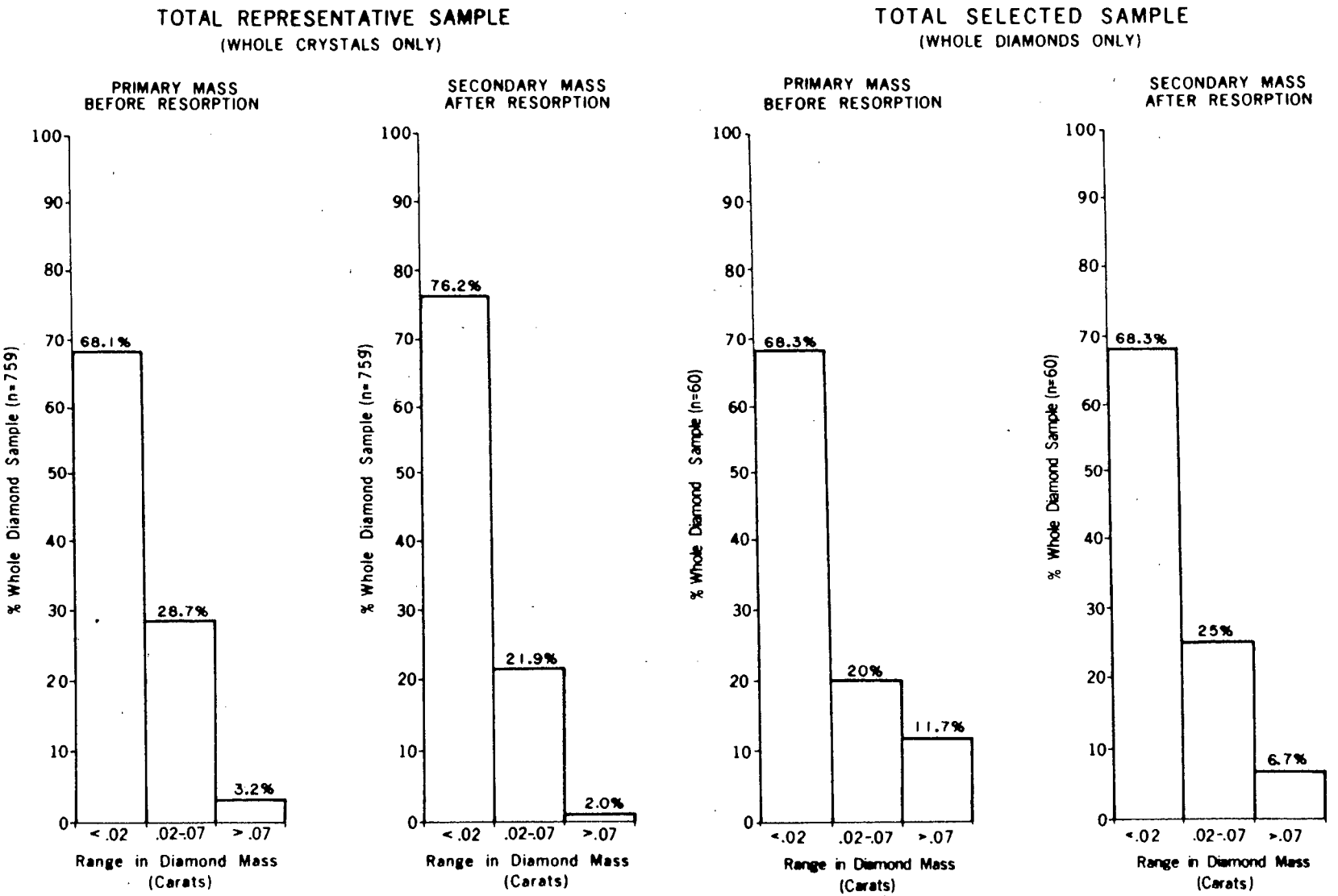


FIGURE 3.20 Size distributions, plotted in combined mass classes, of the total Representative and Selected sample diamonds before (primary mass) and after (secondary mass) resorption.

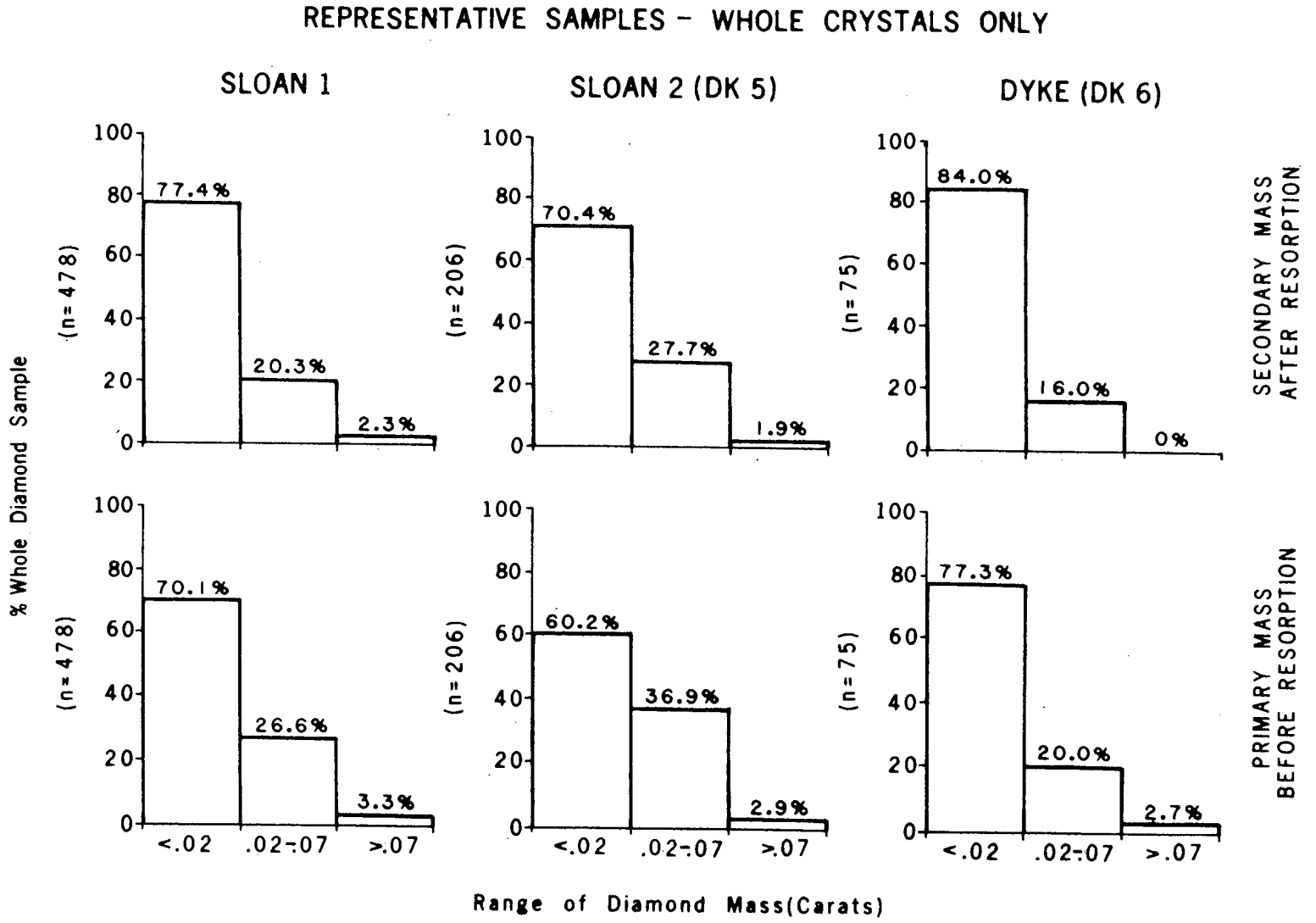


FIGURE 3.21 Size distributions, plotted in combined mass classes, of the Sloan 1, Sloan 2 and Dyke kimberlite subsamples of the Representative sample before (primary mass) and after resorption (secondary mass).

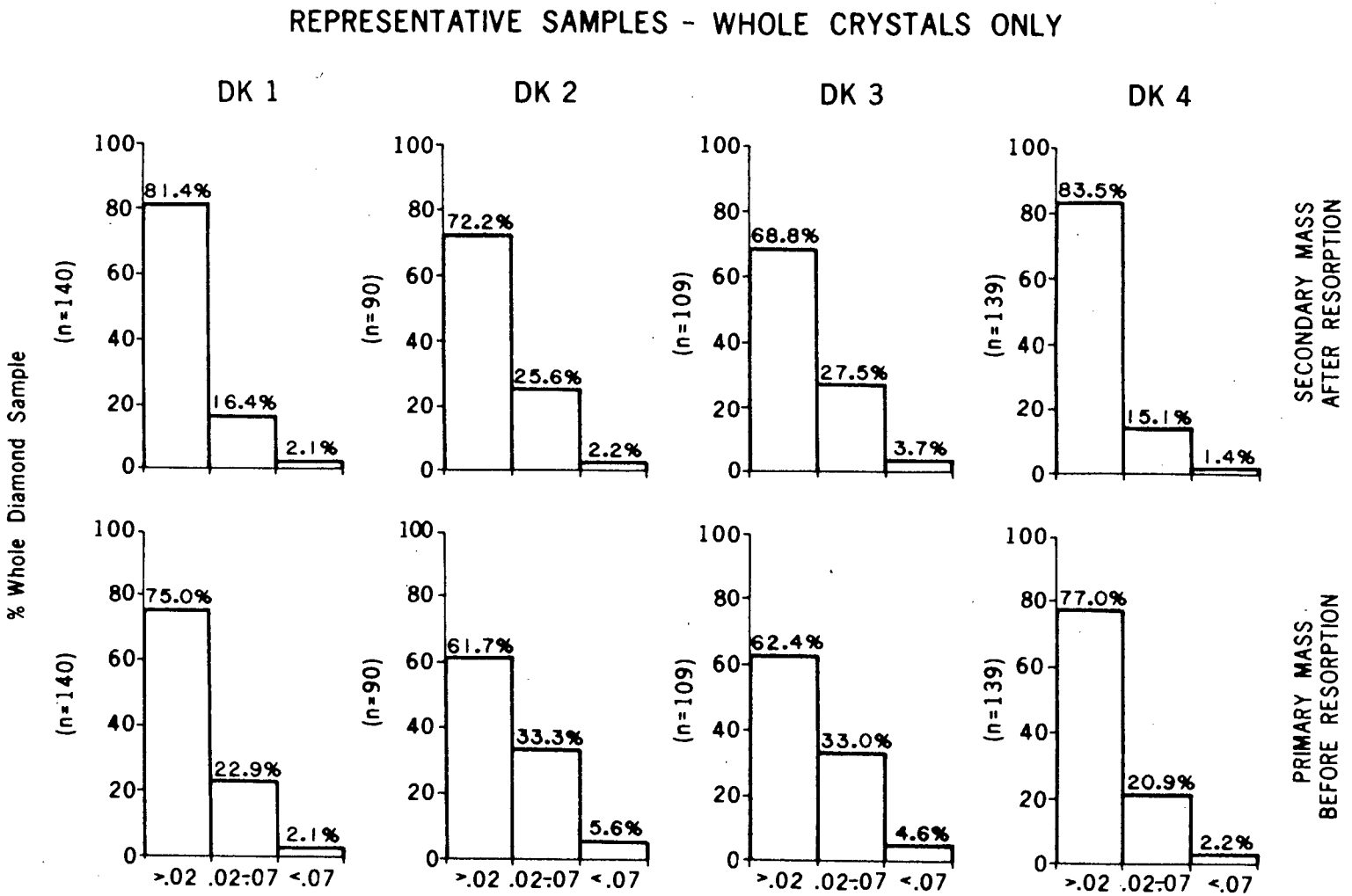


FIGURE 3.22 Size distributions, plotted in combined mass classes of the DK1-DK4 kimberlite phase subsamples of the Representative sample before (primary mass) and after resorption (secondary mass).

FIGURE 3.23 SEM photomicrographs of Sloan diamonds which exhibit xenolithic (a-n) or deformation (o,p) surface features.

a) Diamond SL 46-5 (.009 carat) - A complex octahedron exhibiting rounded triangular plates and serrate laminae. This diamond is of eclogitic affinity as confirmed from included clinopyroxene composition (see Chapter 4).

b) Detail of (b), showing serrate laminae.

c) Diamond SL 24-7 (.018 carat) - A simple aggregate exhibiting serrate laminae and knob-like asperities.

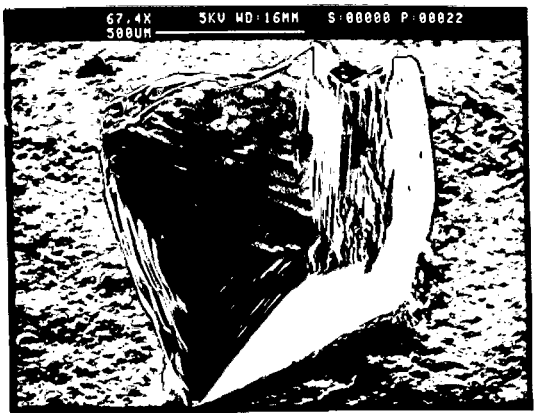
d) Detail of (c), showing serrate laminae and knob-like asperities.

e) Diamond SL 1-5 (.01 carat) - A broken, complex octahedron exhibiting knob-like asperities.

f) Detail of (e), showing the irregular shape of individual knob-like asperities.

g) Diamond SL 34-12 - Detail of Figure 3.8w, showing knob-like asperities occurring largely on, but not limited to, the pseudo-rhombic dodecahedral crystal face.

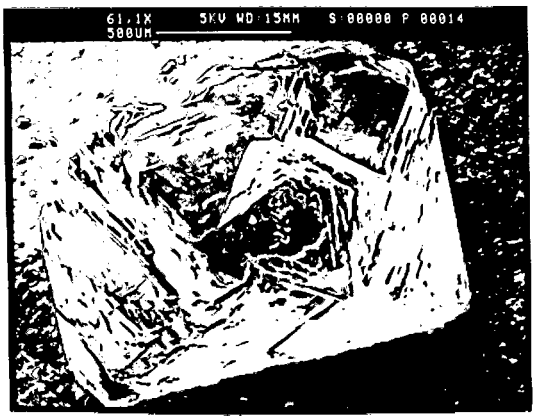
h) Diamond SL 1-11 - Detailed of knob-like asperities, which were coated with graphite.


67.4X 5KV WD:16MM S:00000 P:00022
500UM

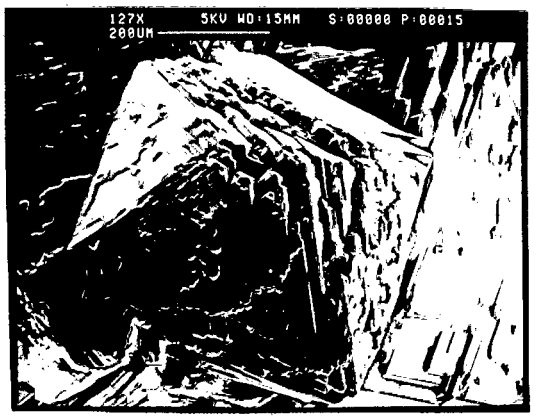
a


263X 5KV WD:18MM S:00000 P:00023
100UM

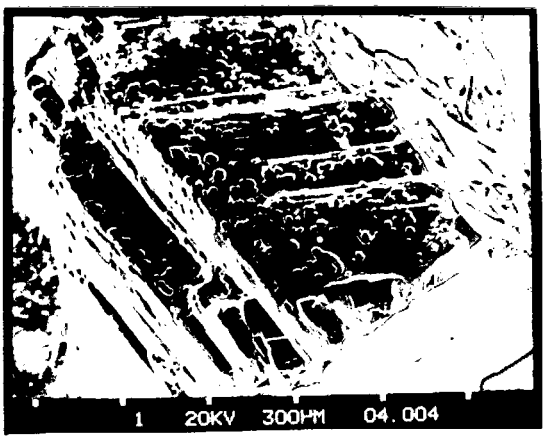
b


61.1X 5KV WD:15MM S:00000 P 00014
500UM

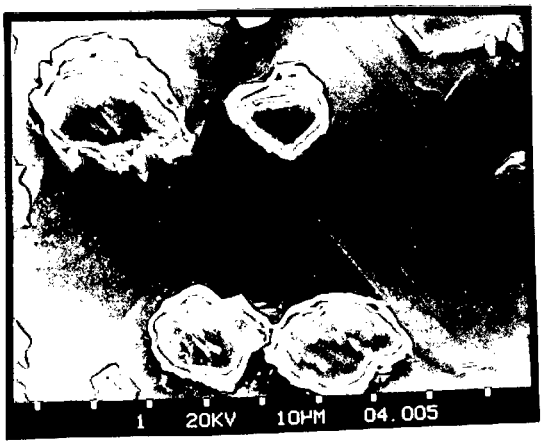
c


127X 5KV WD:15MM S:00000 P:00015
200UM

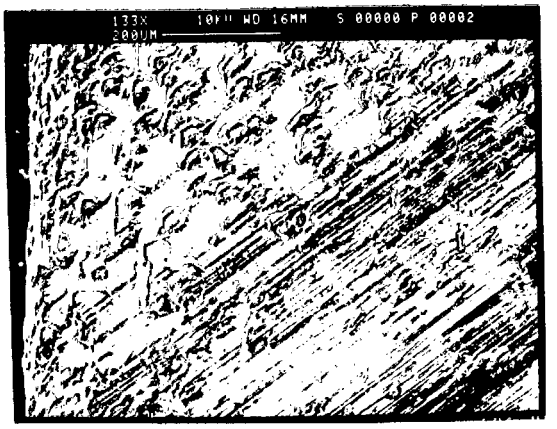
d


1 20KV 300PM 04.004

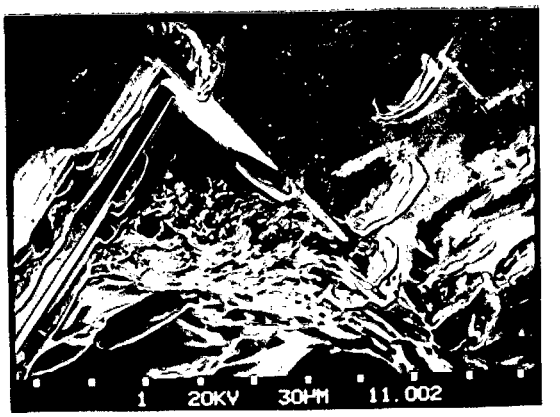
e


1 20KV 10PM 04.005

f


133X 10µ WD 16MM S 00000 P 00002
200UM

g


1 20KV 30PM 11.002

h

FIGURE 3.23 (cont.)

i) Diamond SL 19-1 (.019 carat) - An octahedron (resorption category 4) with a "resorption channel" cut into its surface. Note that the channel is largely filled with secondary material.

j) Detail of (i), showing a portion of the resorption channel filled with secondary material. Note the hexagonal etch pit (lower right).

k) Diamond SL 9-1 (.016 carat) - Another view of this simple aggregate diamond (see Figure 3.11f), showing a possible resorption channel (top left).

l) Detail of (k), showing sharp edges and smooth faces.

m) Diamond SL 1-19 (.19 carat) - An octahedron (resorption category 3) exhibiting what is inferred to be an intergrowth pit. This diamond is of eclogitic affinity as inferred from included sulphide composition (see Chapter 4).

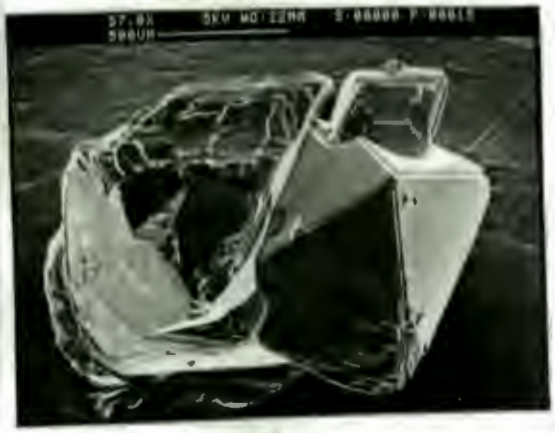
n) Detail of (m), showing the pyramidal pit "intergrowth" pit.

o) Diamond SL 41-5 (.008 carat) - A distorted, resorption category 1 crystal exhibiting lamination lines as well as elongate hillocks.

p) Detail of (o), showing lamination lines crosscutting the elongate hillock trend.

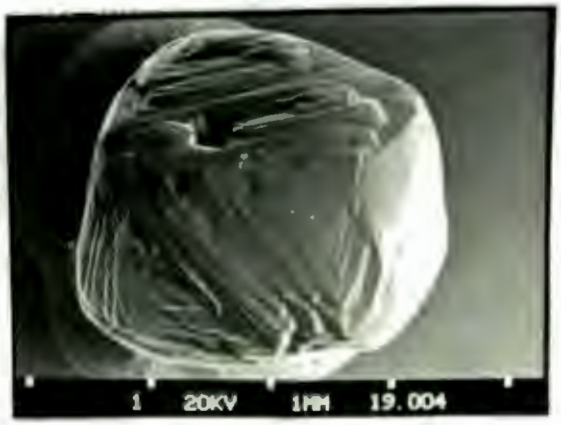
i

j

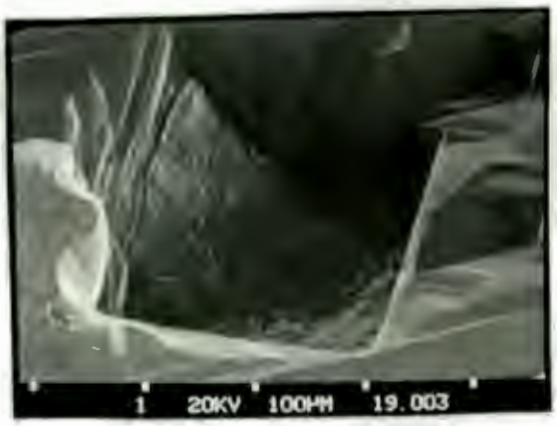


k

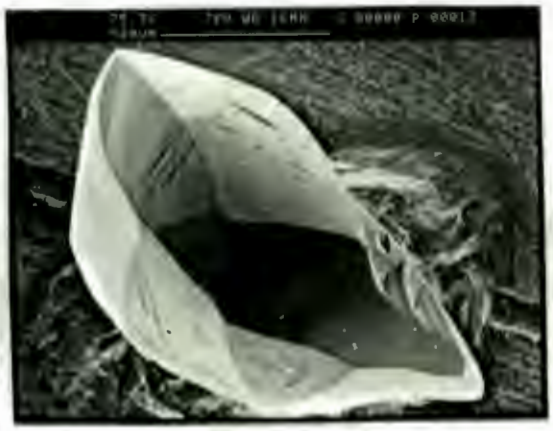
l



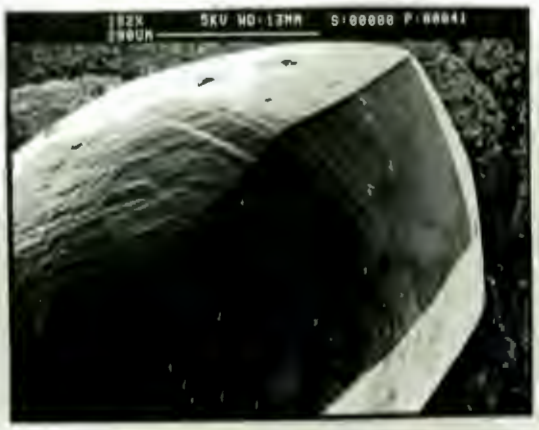
m



n



o



p

FIGURE 3.24 SEM photomicrographs of Sloan diamonds exhibiting resorption features.

a) Diamond SL 32-5K - Detail of slightly rounded triangular plates.

b) Diamond SL 41-3 (.029 carat) - A broken octahedron (resorption category 3) exhibiting shield-shaped laminae on a remnant octahedral face.

c) Detail of diamond SL 1-8 which exhibits well-developed shield-shaped laminae, terraces and a negatively-oriented trigonal etch pit on a remnant octahedral face and elongate (tear drop) hillocks on the tetrahexahedroidal faces.

d) Detail of diamond SL 35-1 showing numerous negatively-oriented trigonal etch pits. Note that they do not occur as linear arrays.

e) Detail of diamond SL 5-3 showing a large tetragonal etch pit on the broken (?) cube face as well as a large, negatively-oriented trigonal etch pit on an octahedral face.

f) Detail of diamond SL 8-6 (see Figure 3.8a) showing fine frosting manifested as minute hexagonal etch pits on the otherwise unresorbed octahedral face.

g) Detail of diamond SL 14-4 showing elongate hillocks on a tetrahexahedroidal face.

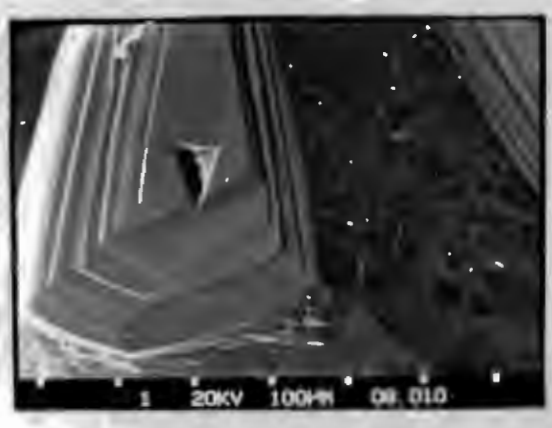
h) Detail of diamond SL 19-3 showing elongate hillocks on a tetrahexahedroidal face.


5KV WD:15MM S:00000 P:00012

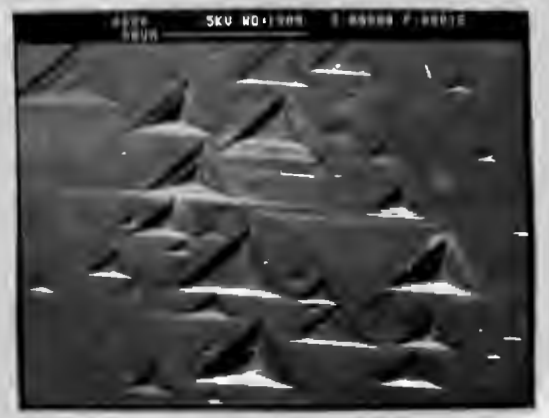
a


3x 7KV WD 16MM

b


1 20KV 100MM 00.010

c


5KV WD:13MM

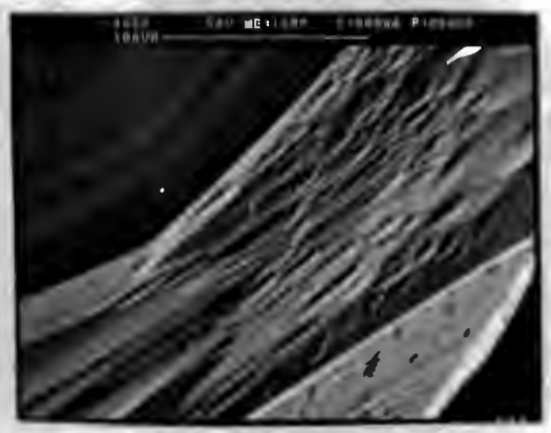
d


5KV WD:13MM S 00000 P 00001

e

f

g



h

FIGURE 3.25 SEM photomicrographs of Sloan diamonds exhibiting late-stage etch features as well as other features of interest.

a) Diamond SL 59-1 (.015 carat) - An octahedron (resorption category 3) from the Sloan 2 kimberlite body which exhibits corrosion sculpture on its tetrahexahedroidal crystal faces.

b) Diamond SL 65-2 (<.005 carat) - An octahedron (resorption category 2) from the Sloan 2 kimberlite body which exhibits corrosion sculpture on its tetrahexahedroidal crystal faces.

c) Diamond SL 59-8 (.029 carat) - A flattened tetrahexahedroid (resorption category 1) from the Sloan 2 kimberlite body which exhibits corrosion sculpture on much of its surface.

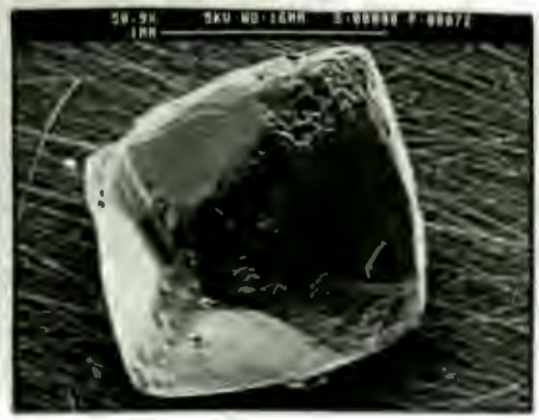
d) Detail of (c) showing corrosion sculpture.

e) Diamond SL 26-3 (.006 carat) - A cleaved crystal exhibiting a large hexagonal inclusion pit on its broken surface.

f) Detail of (e) showing the deep inclusion pit as well as the resorbed cleavage surface as indicated by trigonal etch pits.

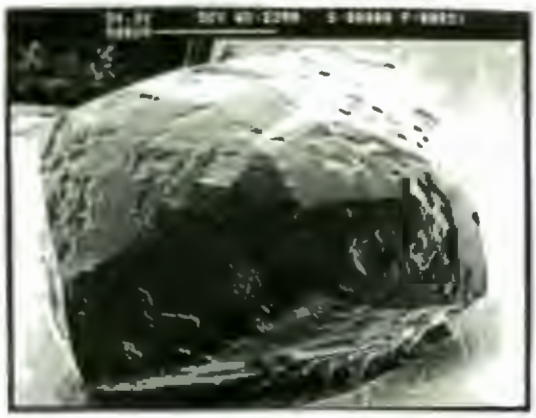
g) Diamond SL 30-1H (.049 carat) - A resorption category 1 crystal which is host to a "diamond inclusion" (SL 30-1I). Inclusion pits are present on the host diamond breakage surface. Note also the rounded, resorbed edges of the host breakage surface.

h) Detail of (g), showing the diamond inclusion (SL 30-1I) which is slightly resorbed (resorption category 4) as indicated by rounded edges and negatively-oriented trigonal etch pits.



a

b



c

d

e

f

g

h

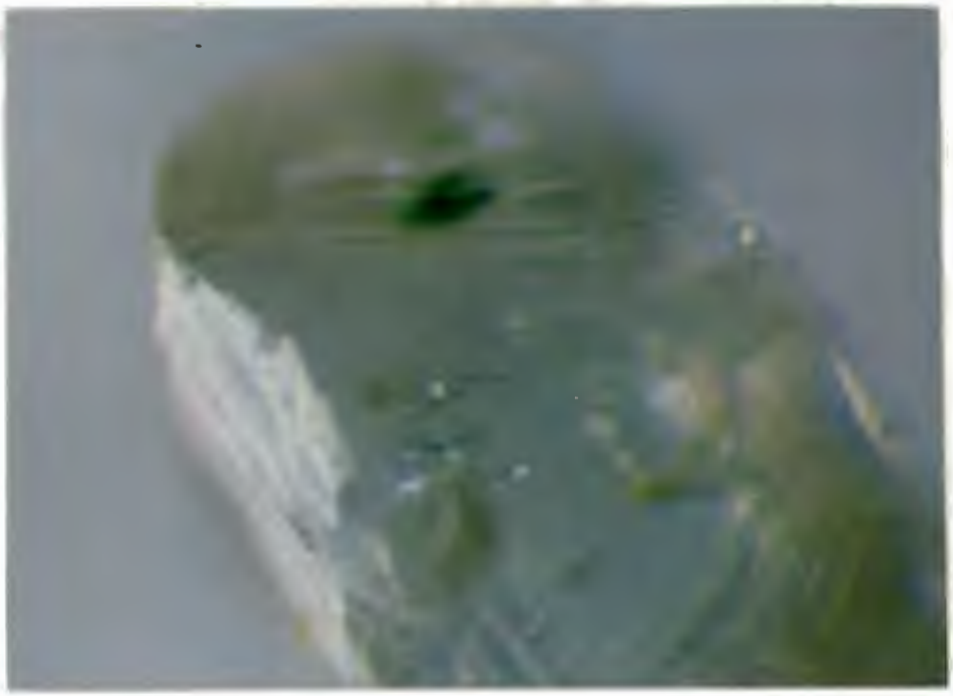


FIGURE 3.26 Photograph of diamond SL 8-5 (.013 carat) which exhibits localized bright-green surficial discoloration. Width of field ≈ 1.5 mm.

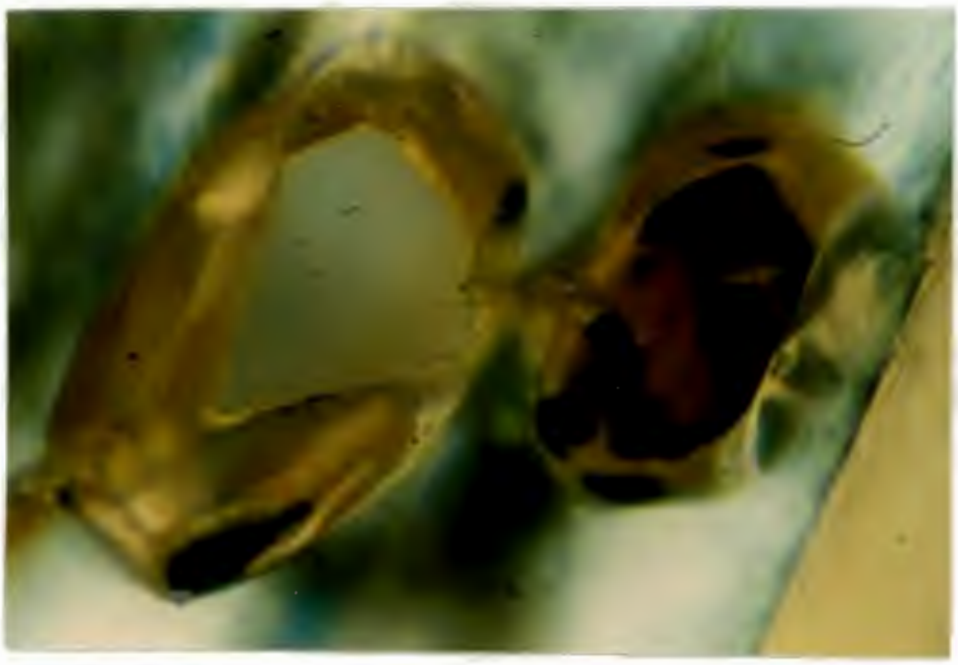


FIGURE 3.27 Detail of diamond SL A83 showing a discoloured secondary inclusion (serpentine), on the right, and a cavity, on the left. Both were formerly primary inclusions of unknown mineralogy. Width of field ≈ .3 mm.

FIGURE 3.28(a) Diamond SL 45-6 (.009 carat) which has discrete, opaque black minerals both included and on its broken surface. The surficial material is magnetite, but the inclusions could not be confirmed as such. Width of field ≈ 1.5 mm.

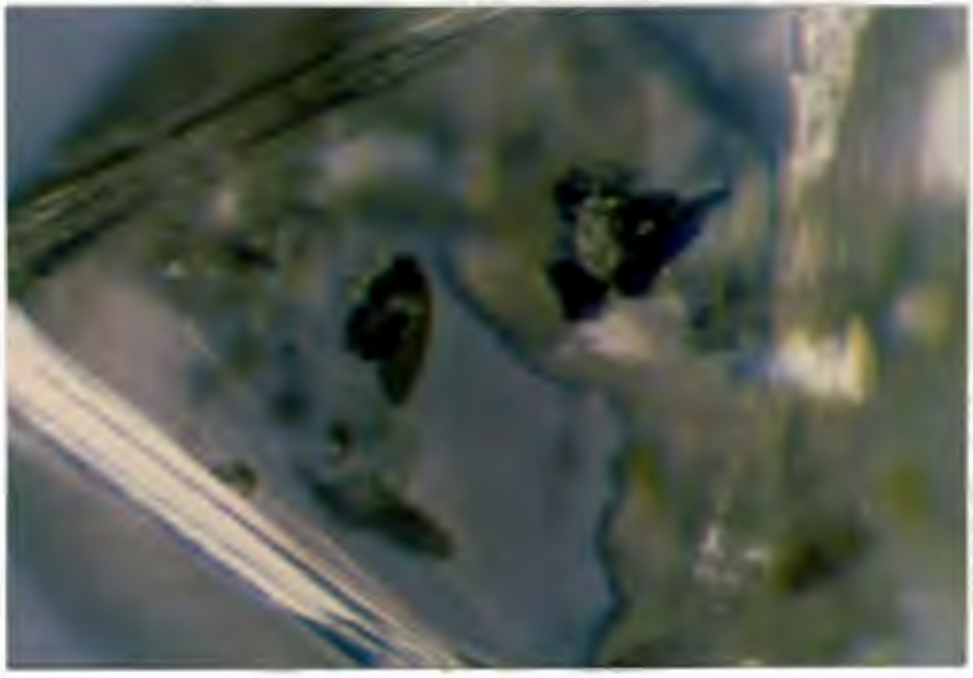


FIGURE 3.28(b) Diamond SL A56 (.01 carat) exhibiting opaque, rosetted inclusions which are probably sulphides. Width of field ≈ 1 mm.

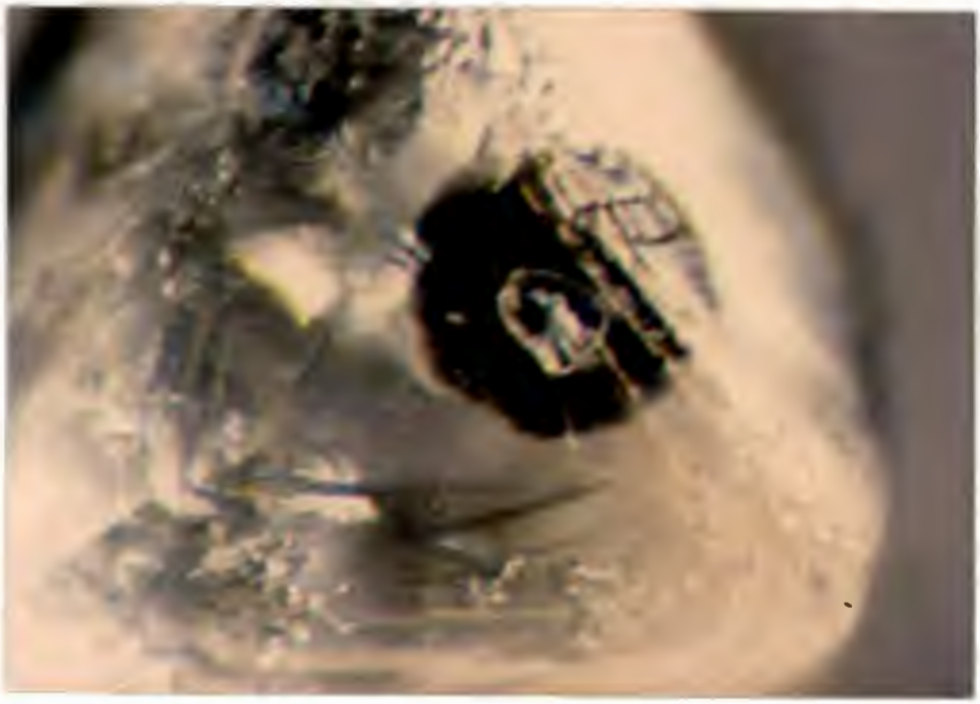


FIGURE 3.28(c) A sulphide rosette with a crystalline eye included in diamond SL A53 (.02 carat). Width of field ≈ 1 mm.

FIGURE 3.28(d) The pyrrhotite eye of the sulphide rosette shown in (c), which exhibits a crystal form probably imposed on it by its diamond host. Width of field ≈ .4 mm.

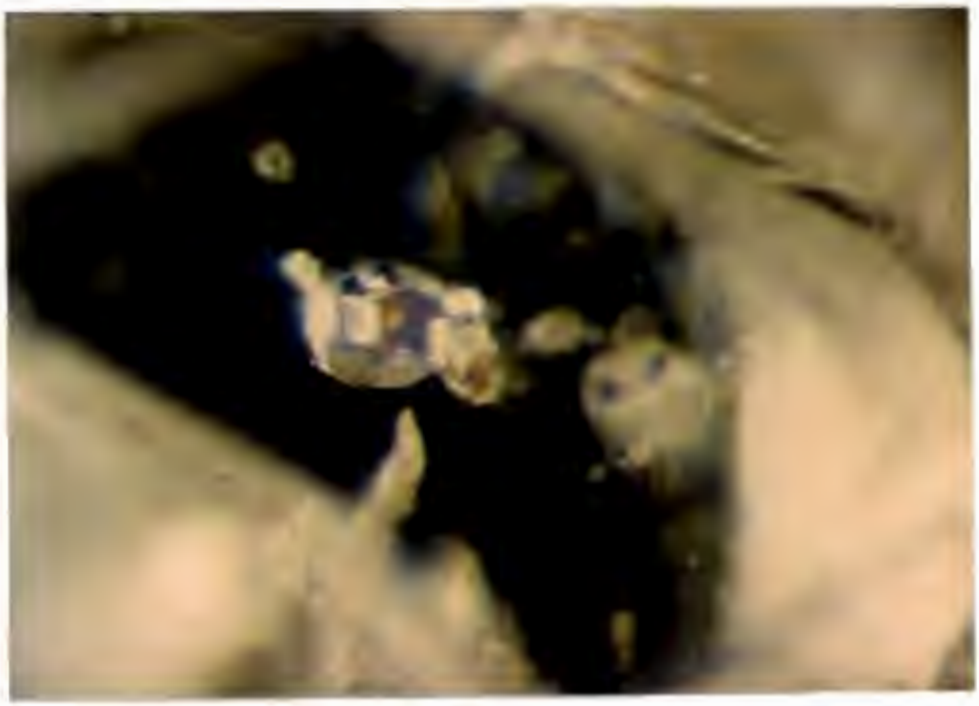


FIGURE 3.29 Orange pyrope-almandine inclusions in Sloan diamond SL A46. Note the flat-faced, cubo-octahedral morphology of the largest inclusion. Width of field ≈ .6 mm.

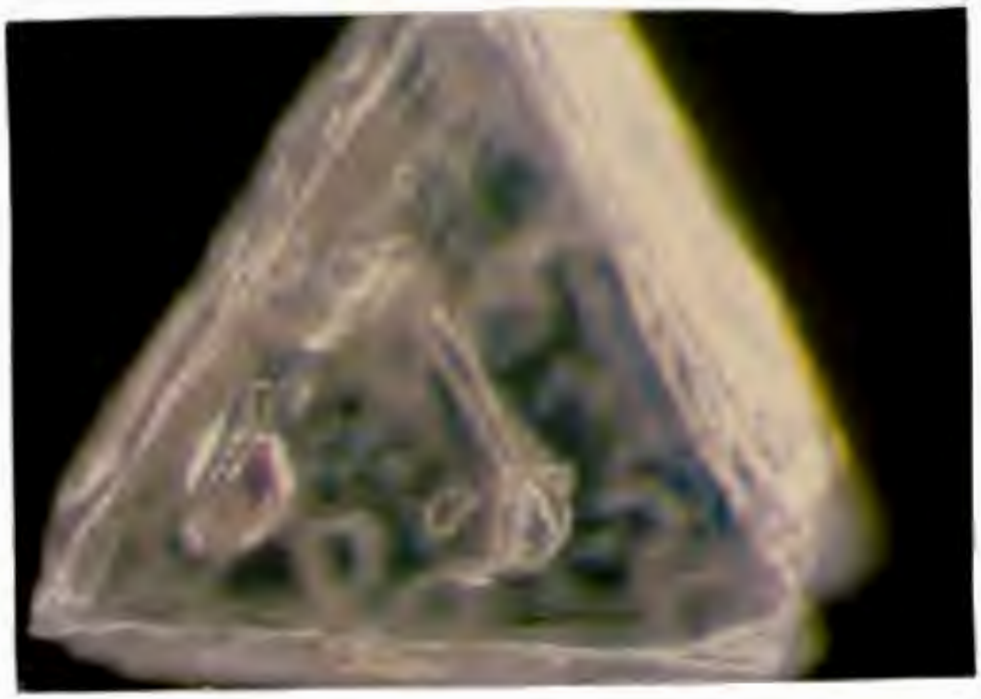


FIGURE 3.30 A purple Cr-rich pyrope inclusion (lower left) coexisting with colourless olivine inclusions in diamond SL 27-6. Note the unusual morphology of the large elongate olivine (centre). Width of field ≈ .8 mm.

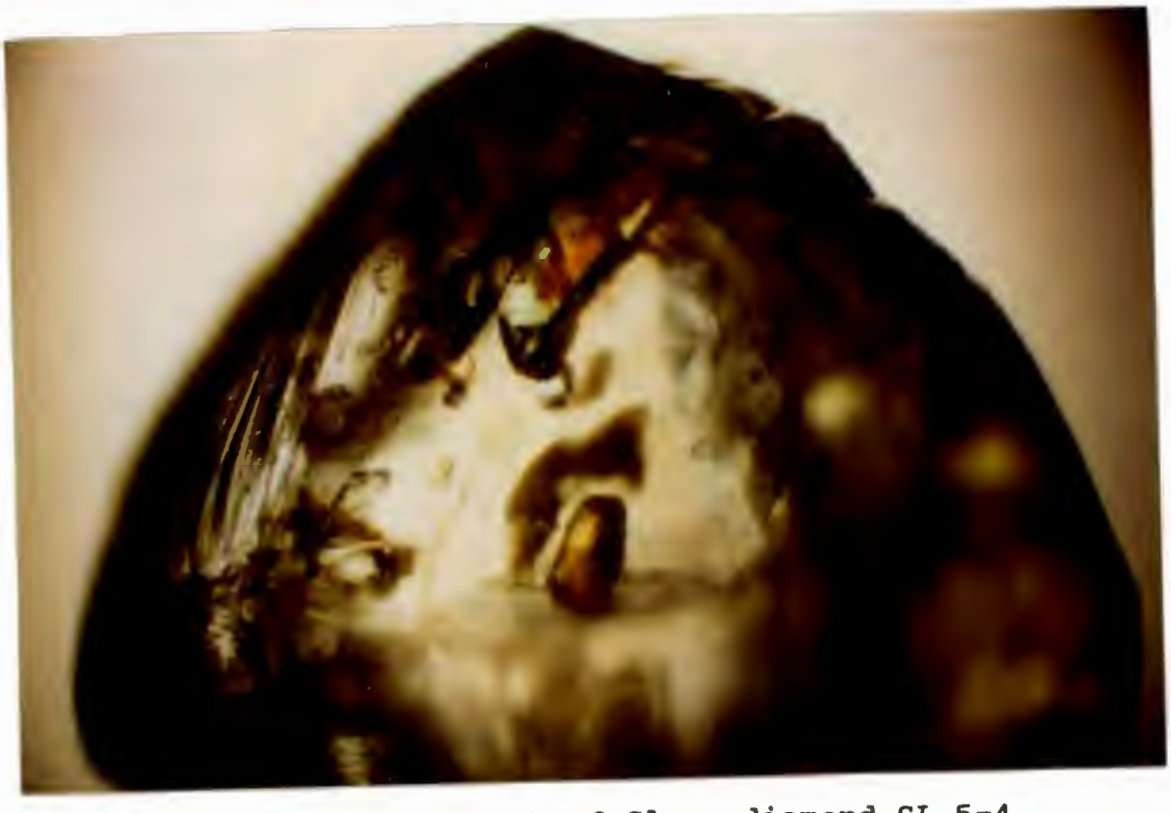


FIGURE 3.31 (a) Photograph of Sloan diamond SL 5-4 showing two large orange pyrope-almandine garnet inclusions, one of which occurs as a bimineralic inclusion with pale green omphacitic clinopyroxene. Note the sulphide (?) rosette cloud partially encircling the monomineralic garnet (lower centre). Width of field ≈ 2.5 mm.

FIGURE 3.31 (b) Detail of (a) showing the bimineralic inclusion which is essentially an eclogite. Note the smaller colourless inclusion (left) which is probably omphacitic clinopyroxene. Width of field ≈ .3 mm.

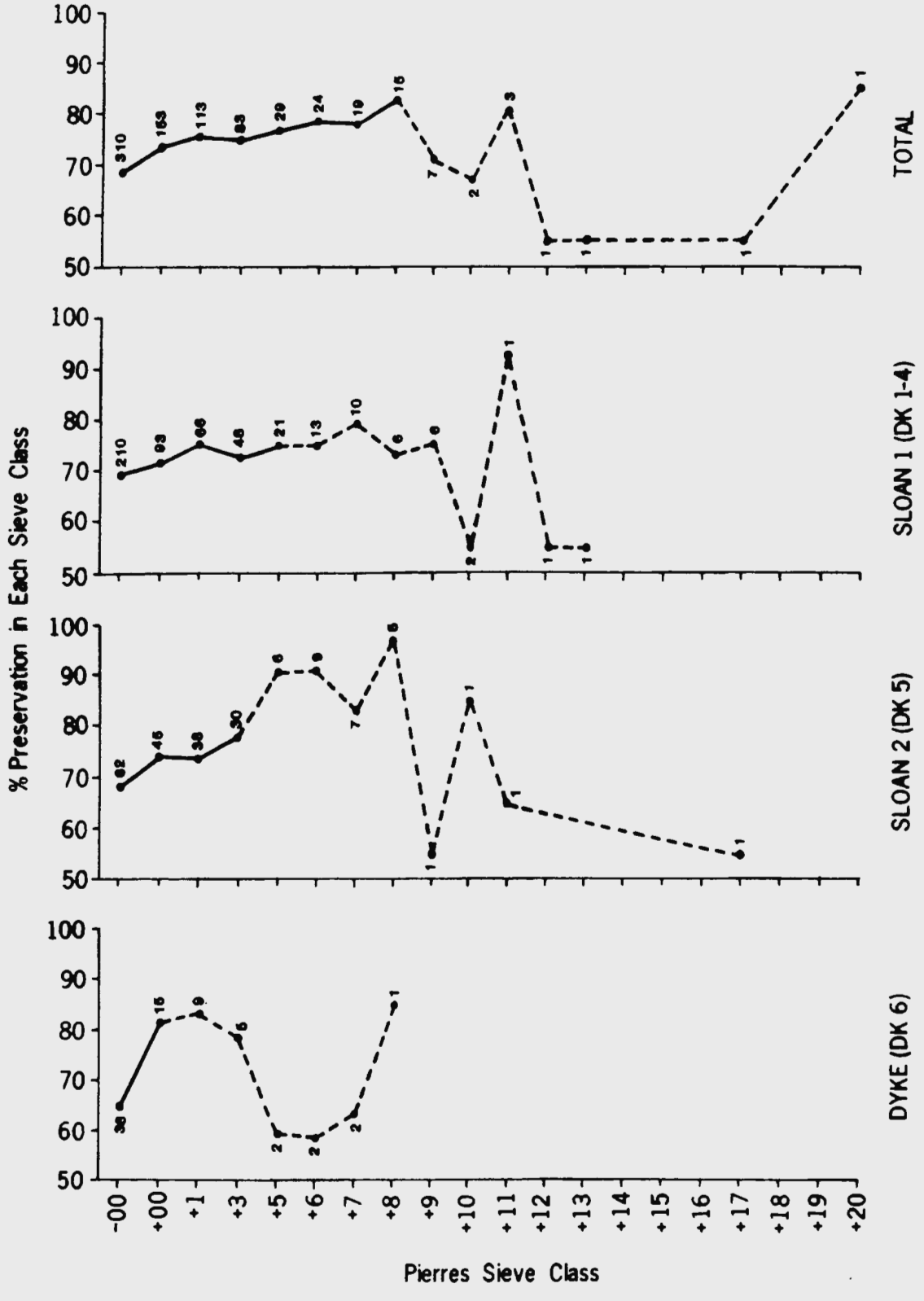


FIGURE 3.32 The percentage preservation of diamonds in each sieve class for the total Representative sample as well as the Sloan 1, Sloan 2 and Dyke kimberlite body subsamples. The values indicate the number of diamonds, in each sieve class, upon which the calculation is based.

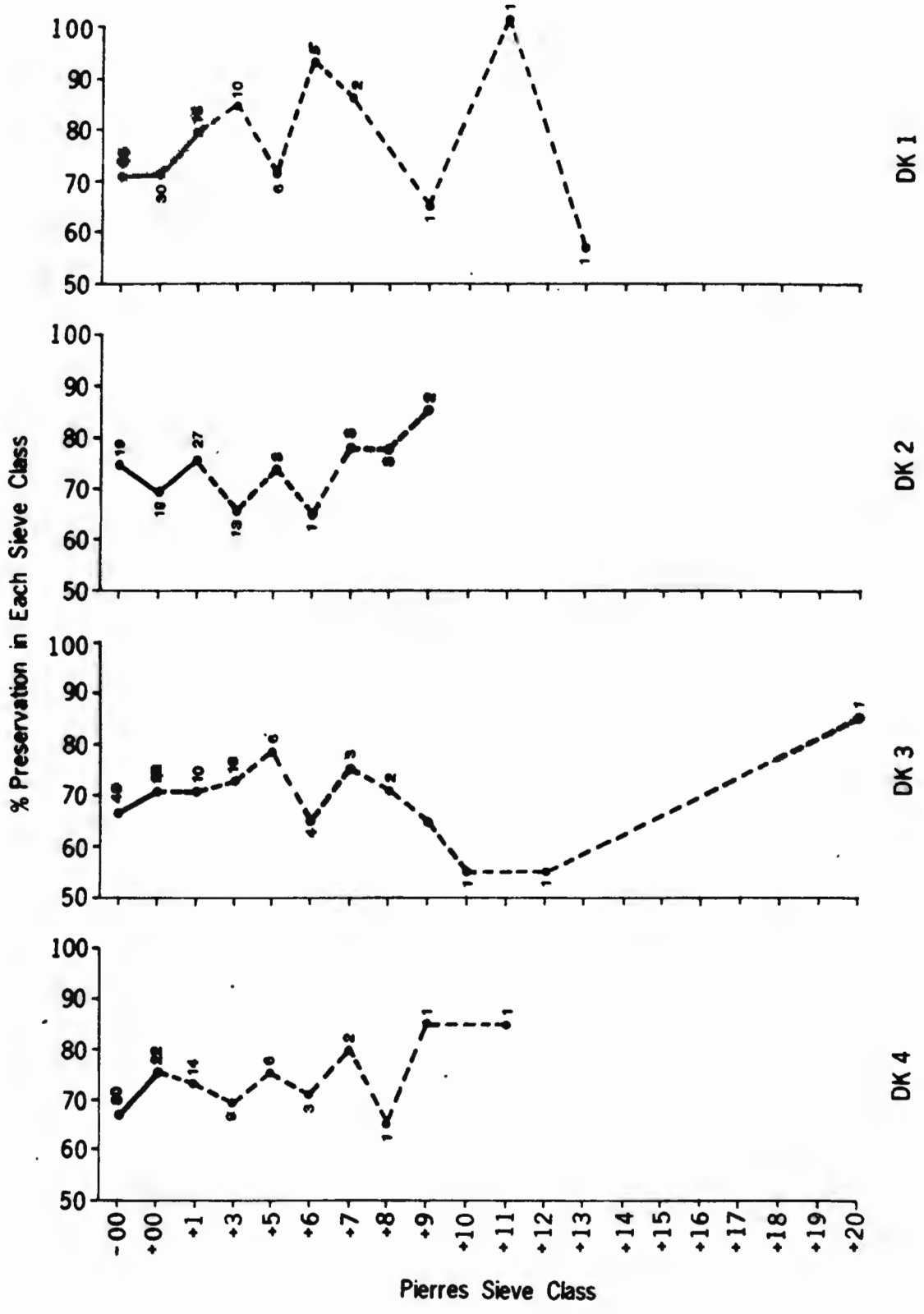


FIGURE 3.33 The percentage preservation of diamonds in each sieve class for the DK1-DK4 kimberlite phase subsamples of the total Representative sample. The values indicate the number of diamonds, in each sieve class, upon which the calculation is based.

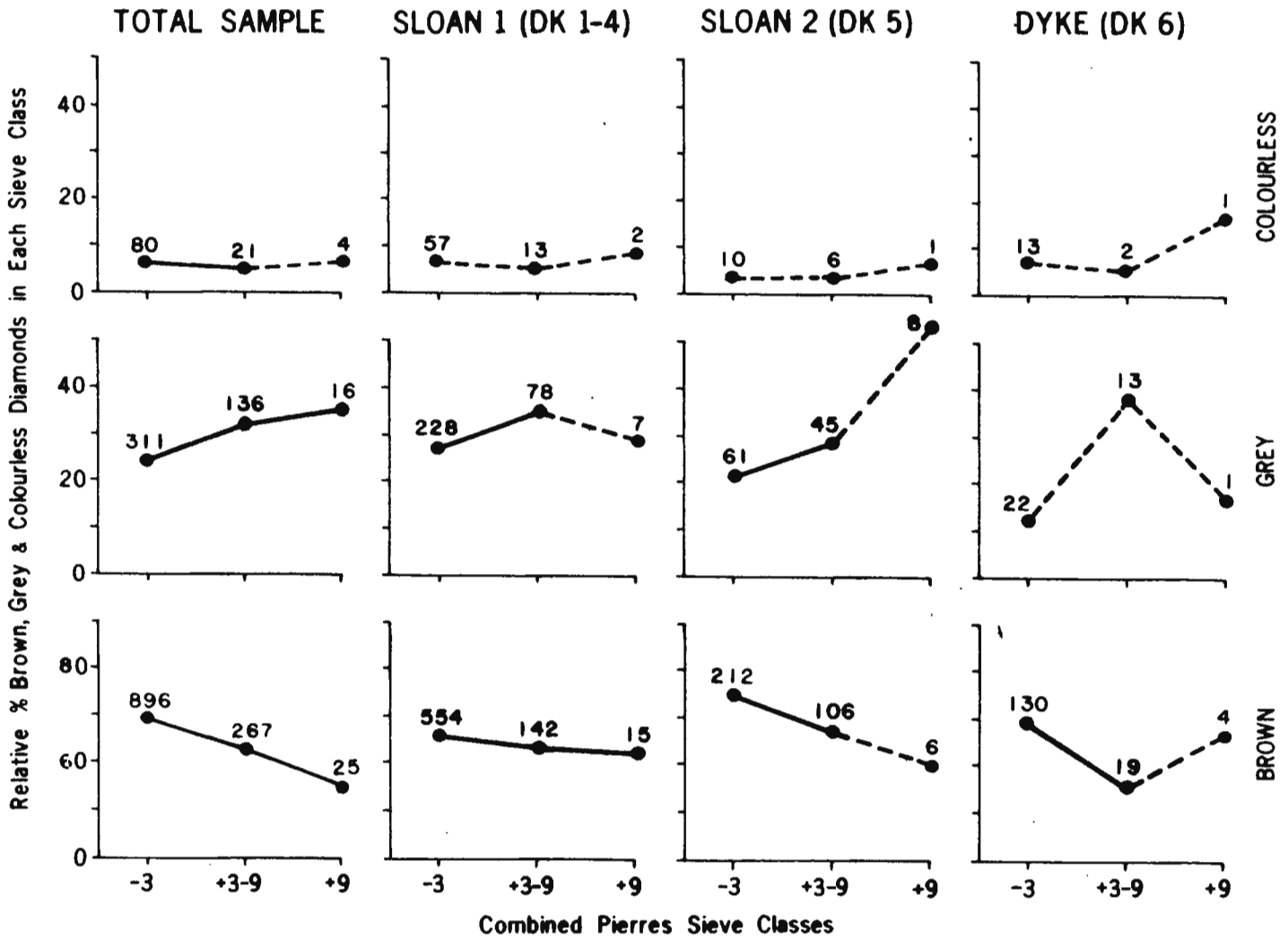


FIGURE 3.34 The percentage of brown, grey and colourless diamonds in combined sieve classes (secondary mass) in the total Representative sample as well as in the Sloan 1, Sloan 2 and Dyke kimberlite body subsamples.

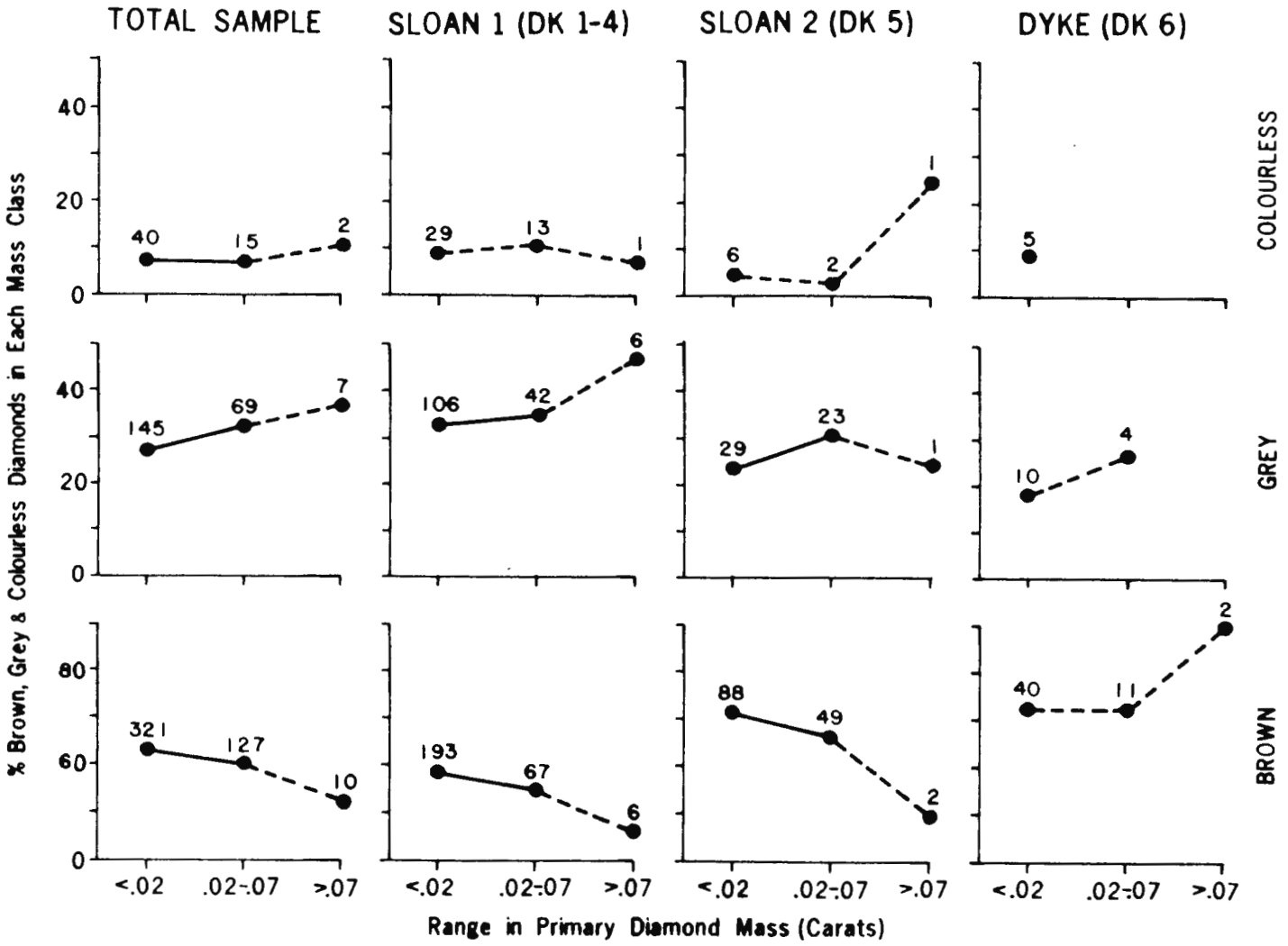


FIGURE 3.35 The percentage of brown, grey and colourless diamonds in combined primary mass classes in the total Representative sample as well as in the Sloan 1, Sloan 2 and Dyke kimberlite body subsamples.

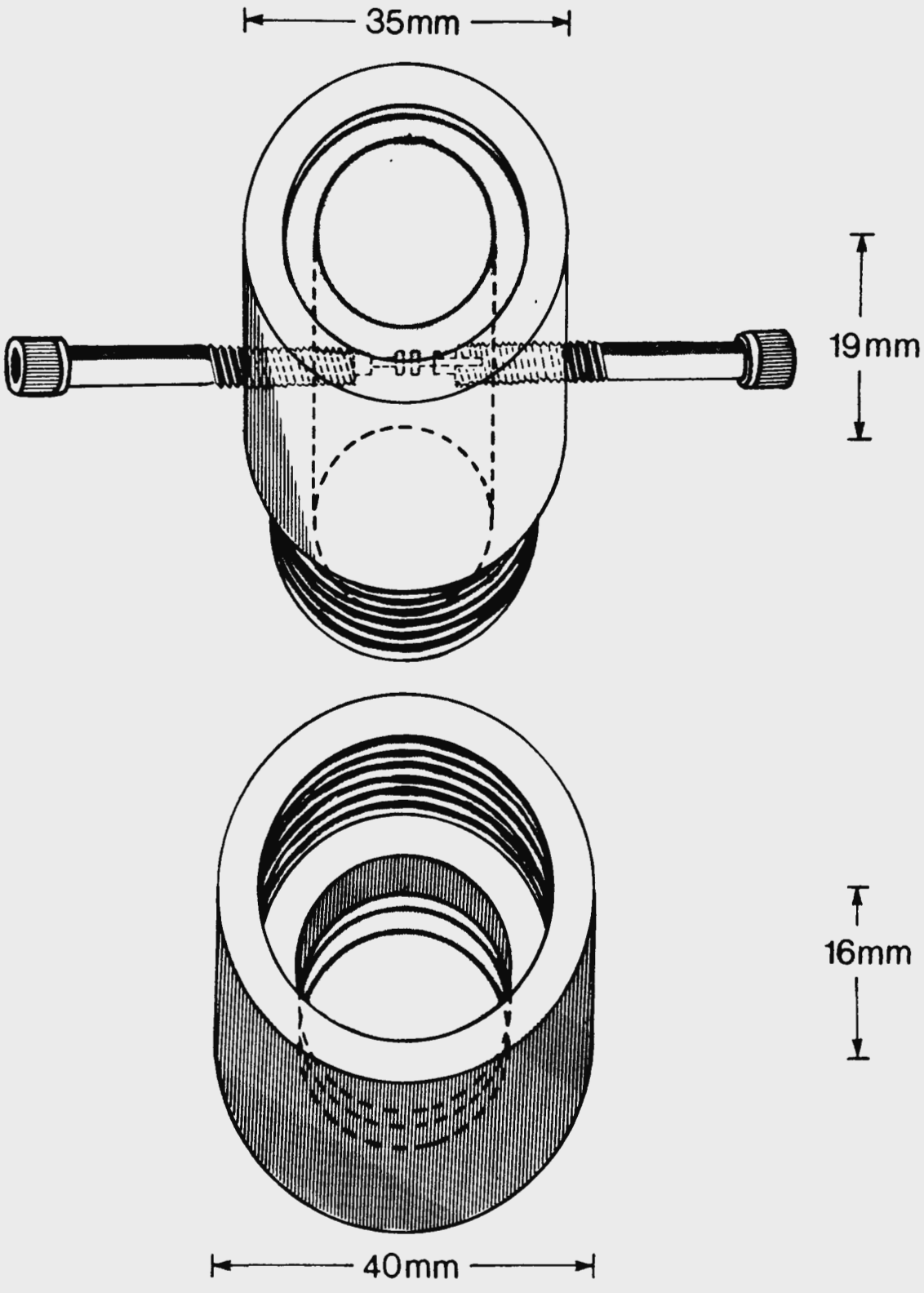


FIGURE 4.1 Sketch of the diamond cracker used for inclusion recovery in this study. The screw-on cap was not used as is discussed in Section 4.2. The diamond is lodged between the thumbscrew tips which spin independently on a ball-bearing. A glass window on the top prevents diamond inclusion fragments from escaping.

FIGURE 4.2 Diamond cracking and inclusion recovery set-up. Essential items include: diamond cracker (Fig. 4.1), a stereoscopic microscope with zoom lens, both reflected and transmitted light sources, tweezers, probe slides and epoxy mounting glue. Also useful are a polarizer (not shown) as well as a trinocular head for photographic documentation.

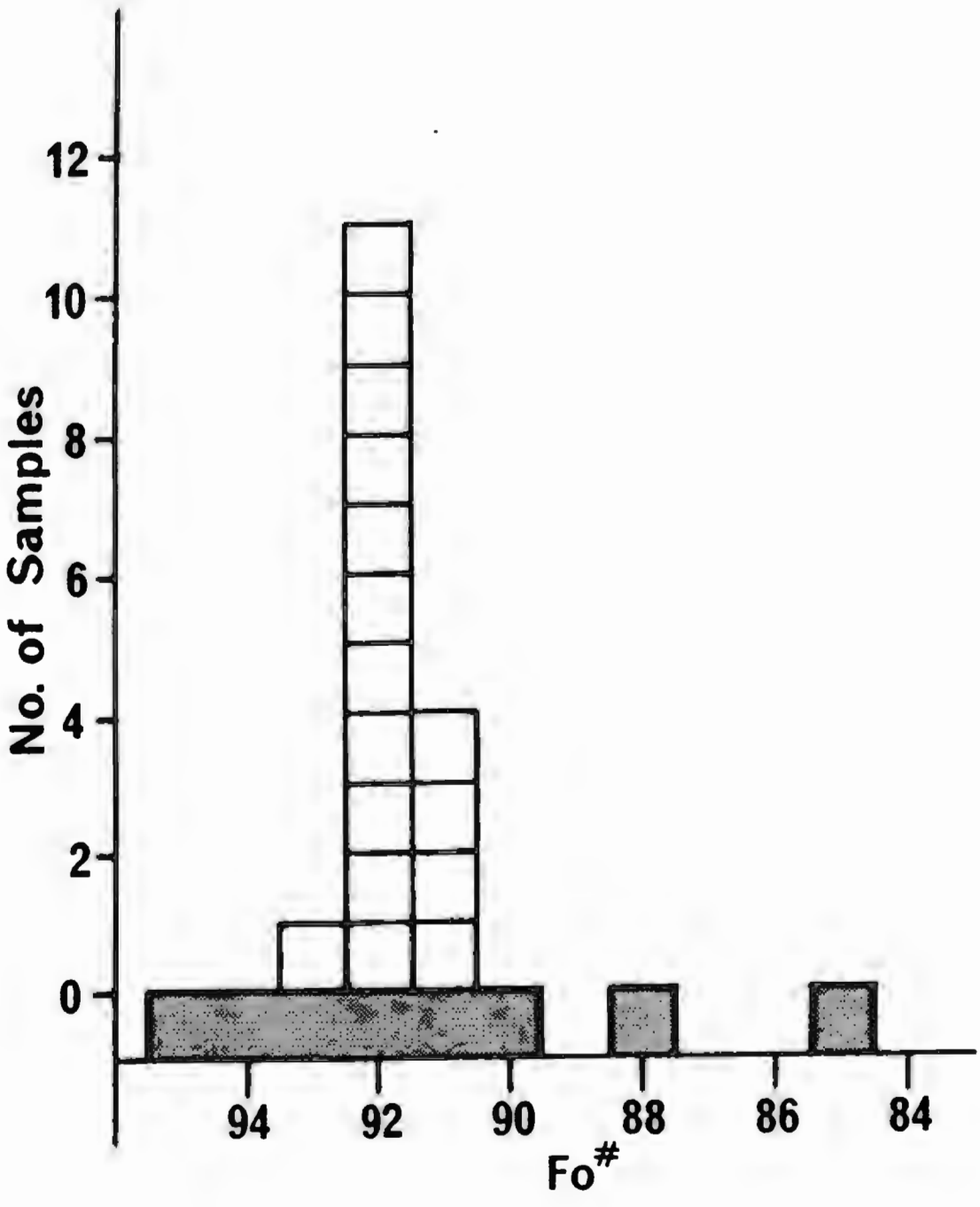


FIGURE 4.3 Forsterite content of olivine inclusions in Sloan diamonds (open) relative to the worldwide range (filled), plotted at .5 mol.% intervals. Worldwide range from Meyer (1987), Gurney et al. (1986) and Moore and Gurney (1989).

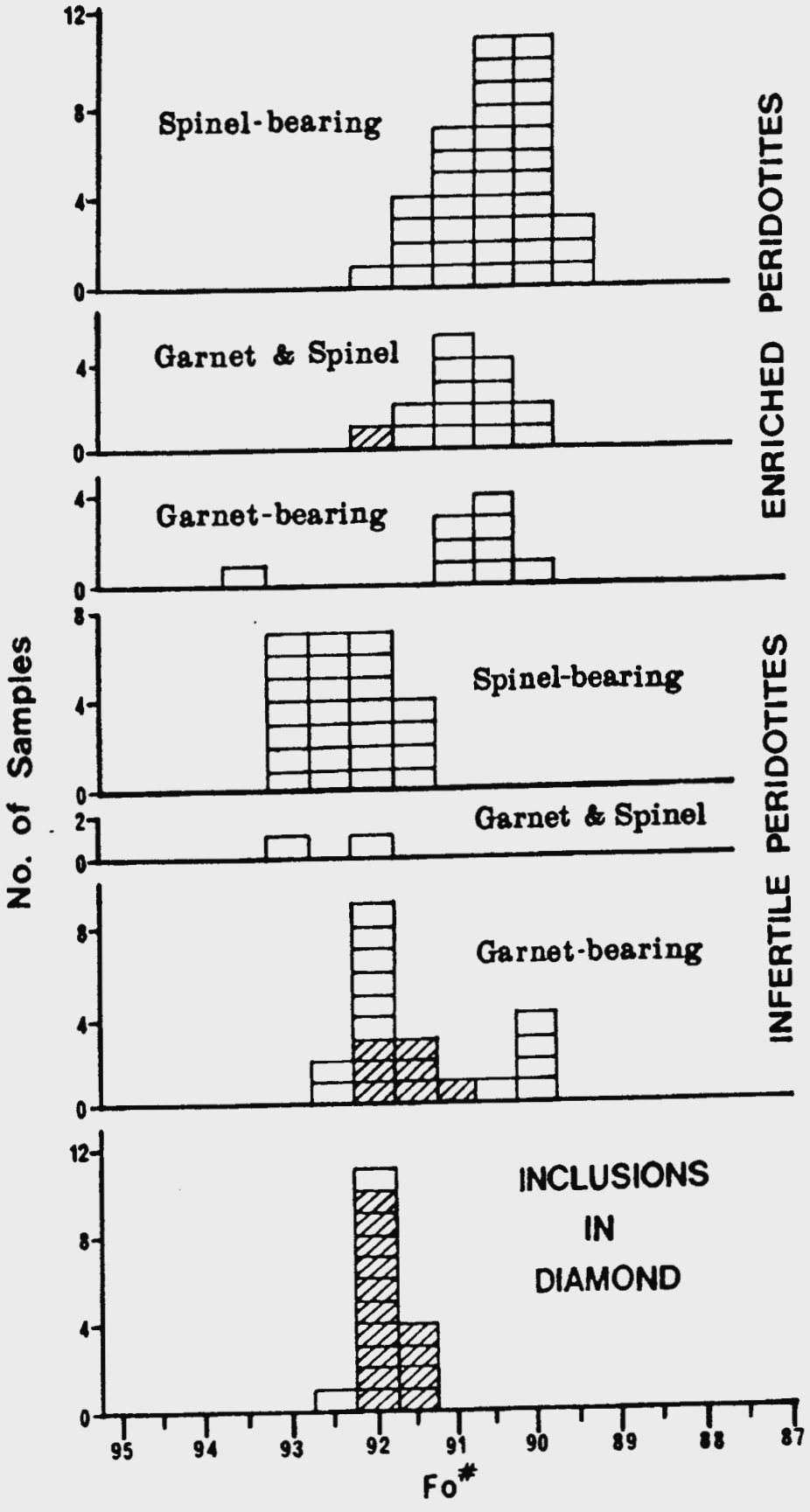


FIGURE 4.4 Histograms showing the distribution of forsterite content for olivine inclusions in diamond (this study) and olivines found in various ultramafic xenoliths recovered from the Sloan pipes. The xenoliths are classified by group according to Eggler et al. (1987). Hatched blocks indicate olivines having greater than 0.05 wt% Cr_2O_3. Note the similarity both in forsterite and chrome content between the inclusion olivines and those in the `infertile' garnet peridotites. Note also that the two most magnesian inclusion olivines had Cr_2O_3 contents below detection of .02 $\pm$ .02 wt.% Cr_2O_3.

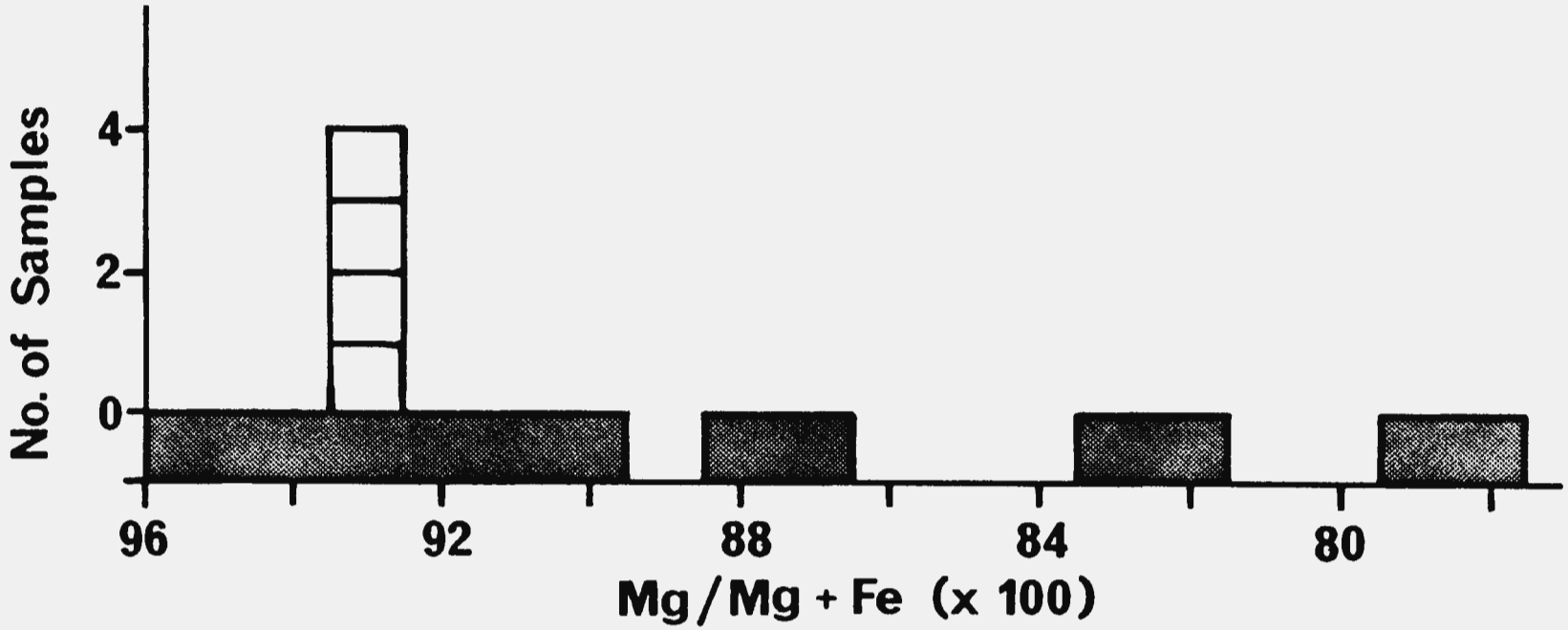


FIGURE 4.5 Mg/Mg+Fe (x100) composition of orthopyroxene inclusions in Sloan diamonds (open) relative to the worldwide range (filled). Worldwide range from Meyer (1987).

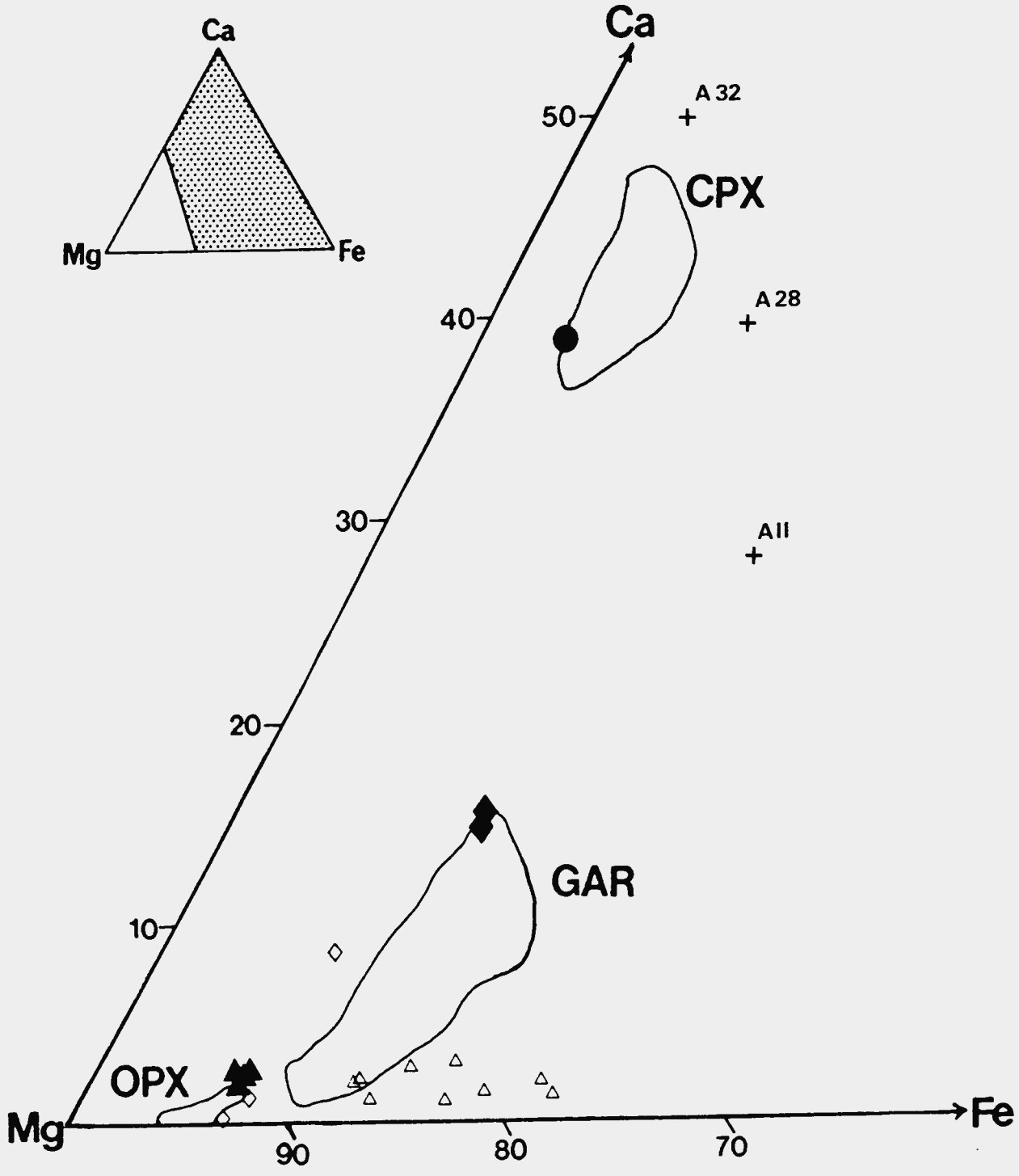


FIGURE 4.6 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the Sloan peridotitic orthopyroxene (filled triangles), garnet (filled diamonds) and clinopyroxene (filled circles) inclusions relative to their respective worldwide fields. Outliers from worldwide fields are plotted for orthopyroxene (open triangles) and garnet (open diamond). Most of the outlier orthopyroxenes are of websteritic affinity. Also plotted and labelled are possibly primary diopsidic clinopyroxenes (+) which are discussed in Section 4.6.2.

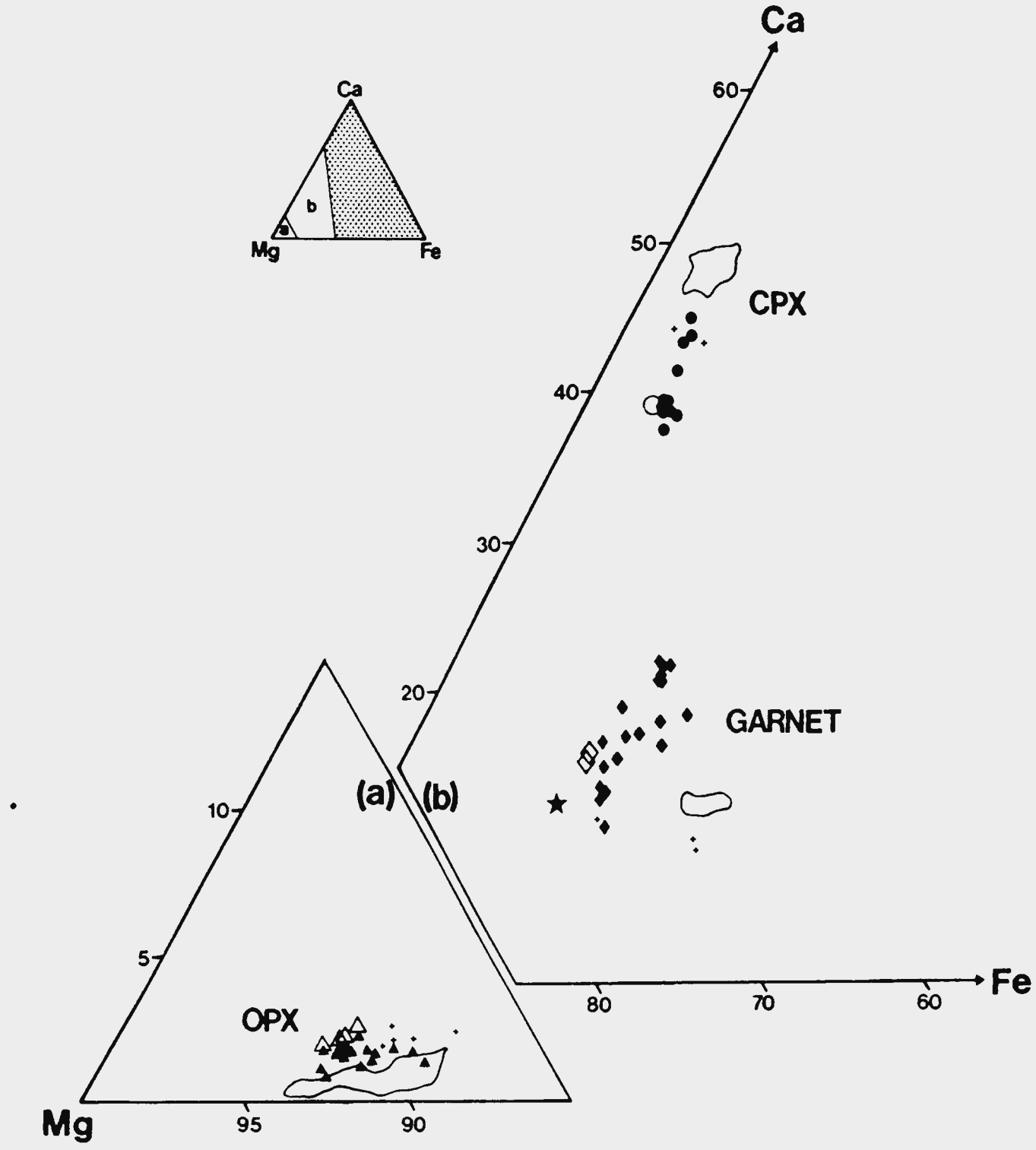


FIGURE 4.7 Portions (a) and (b) of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the association of peridotitic garnet, clinopyroxene and orthopyroxene inclusions in Sloan diamonds (large open symbols) with minerals from `infertile' garnet peridotite xenoliths (Eggler et al., 1987) (filled symbols). Minerals from all other Sloan peridotite xenoliths are represented by fields and outliers (+). The star represents garnet from the diamondiferous peridotite recovered from the Schaffer kimberlite occurrence (McCallum and Eggler, 1976).

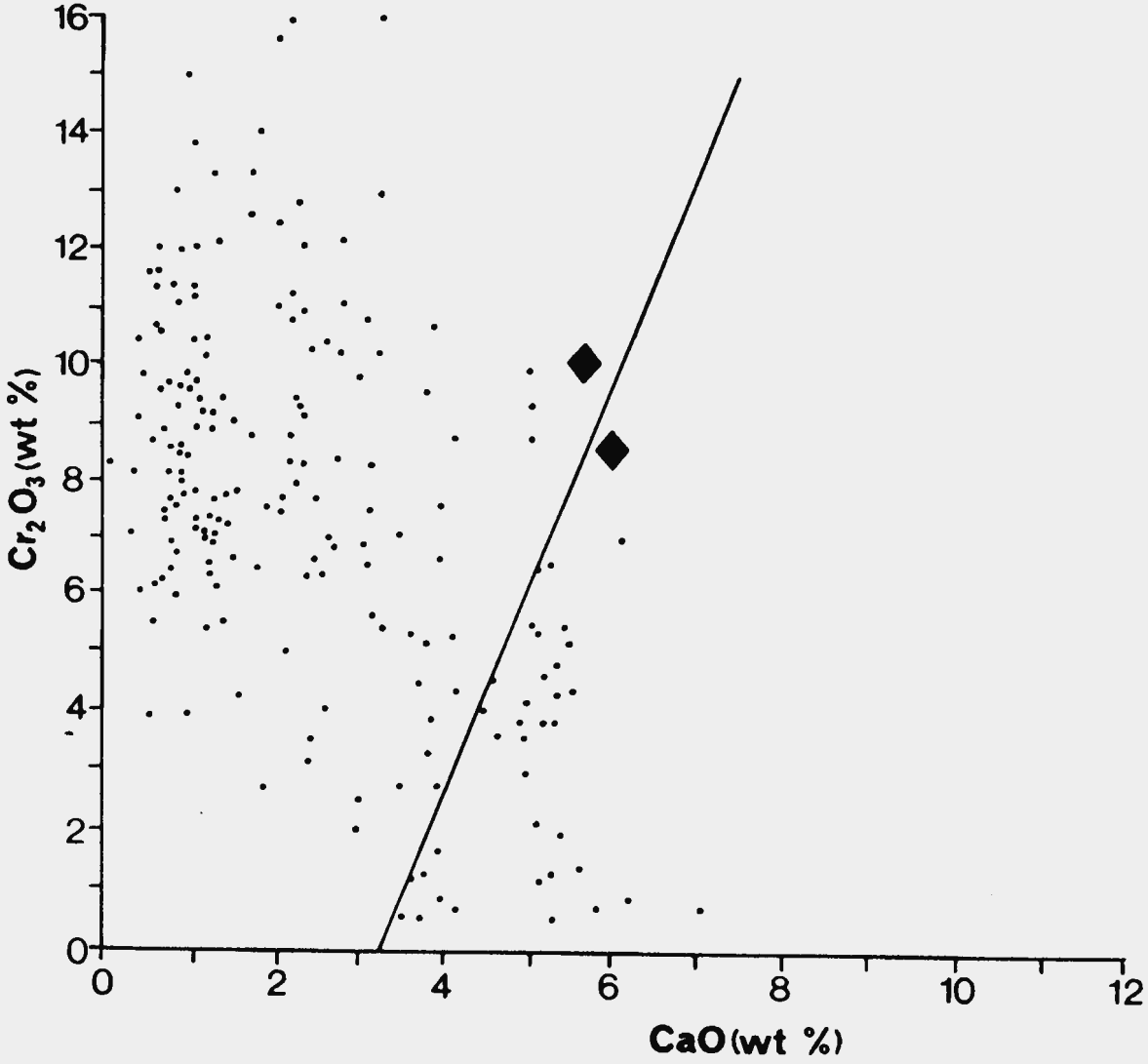


FIGURE 4.8 Variation in CaO with Cr_2O_3 for the peridotitic Cr-pyrope garnet inclusions from Sloan diamonds (large filled symbols) relative to Cr-pyrope inclusions in diamonds found worldwide (small dots). The inclusion garnets plot on or near the lherzolite trend (Sobolev, 1974) as demarcated by the 85% line of Gurney (1984).

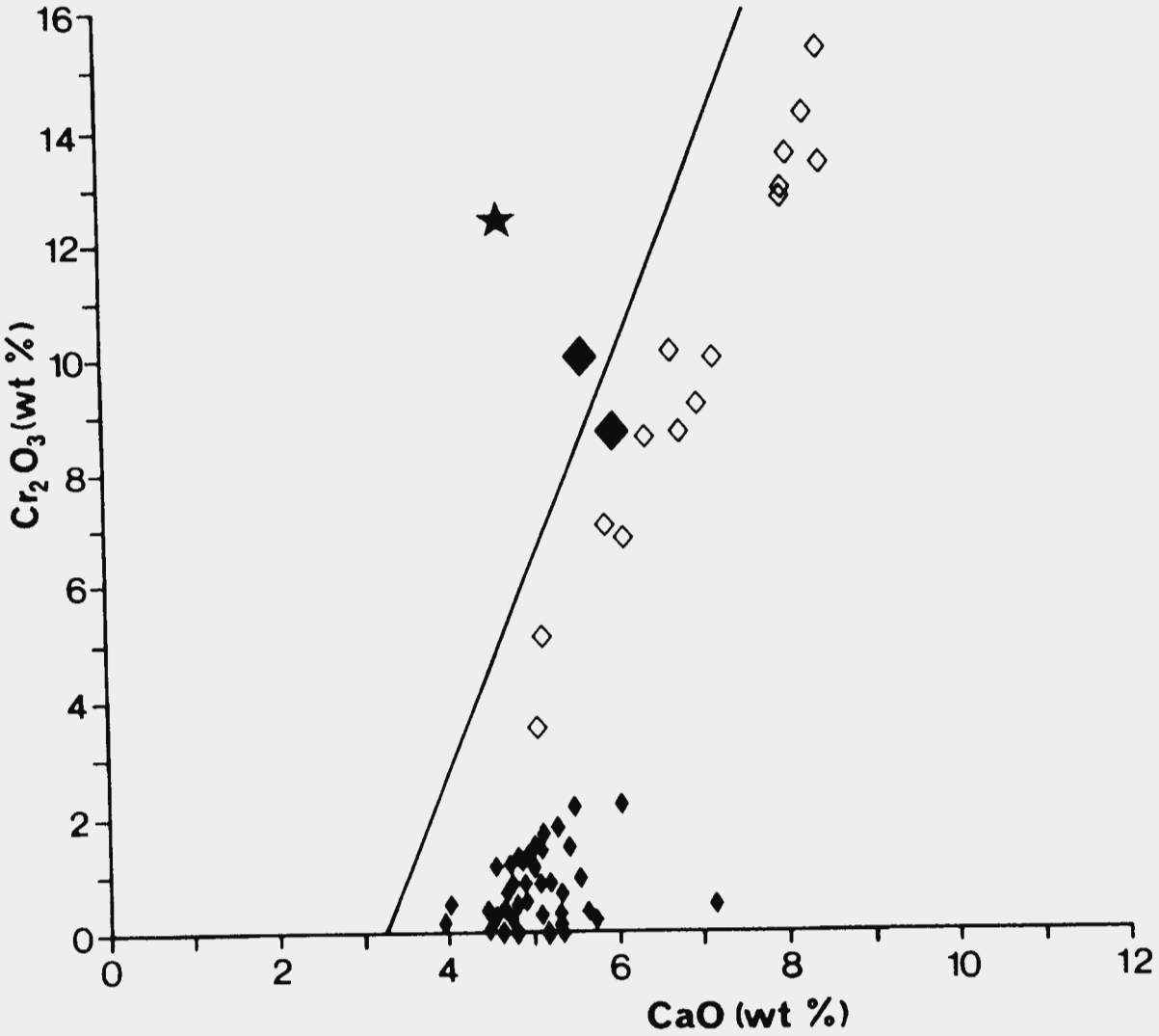


FIGURE 4.9 Variation of CaO with Cr_2O_3 for the peridotitic Cr-pyrope garnet inclusions from Sloan diamonds (large filled diamonds) relative to minerals from `infertile' garnet peridotite xenoliths (small open diamonds) and all other peridotite xenoliths (small filled diamonds) from the Sloan locality. Also plotted is the garnet from the Schaffer diamond peridotite (star) (McCallum and Eggler, 1976) and the 85% line of Gurney (1984).

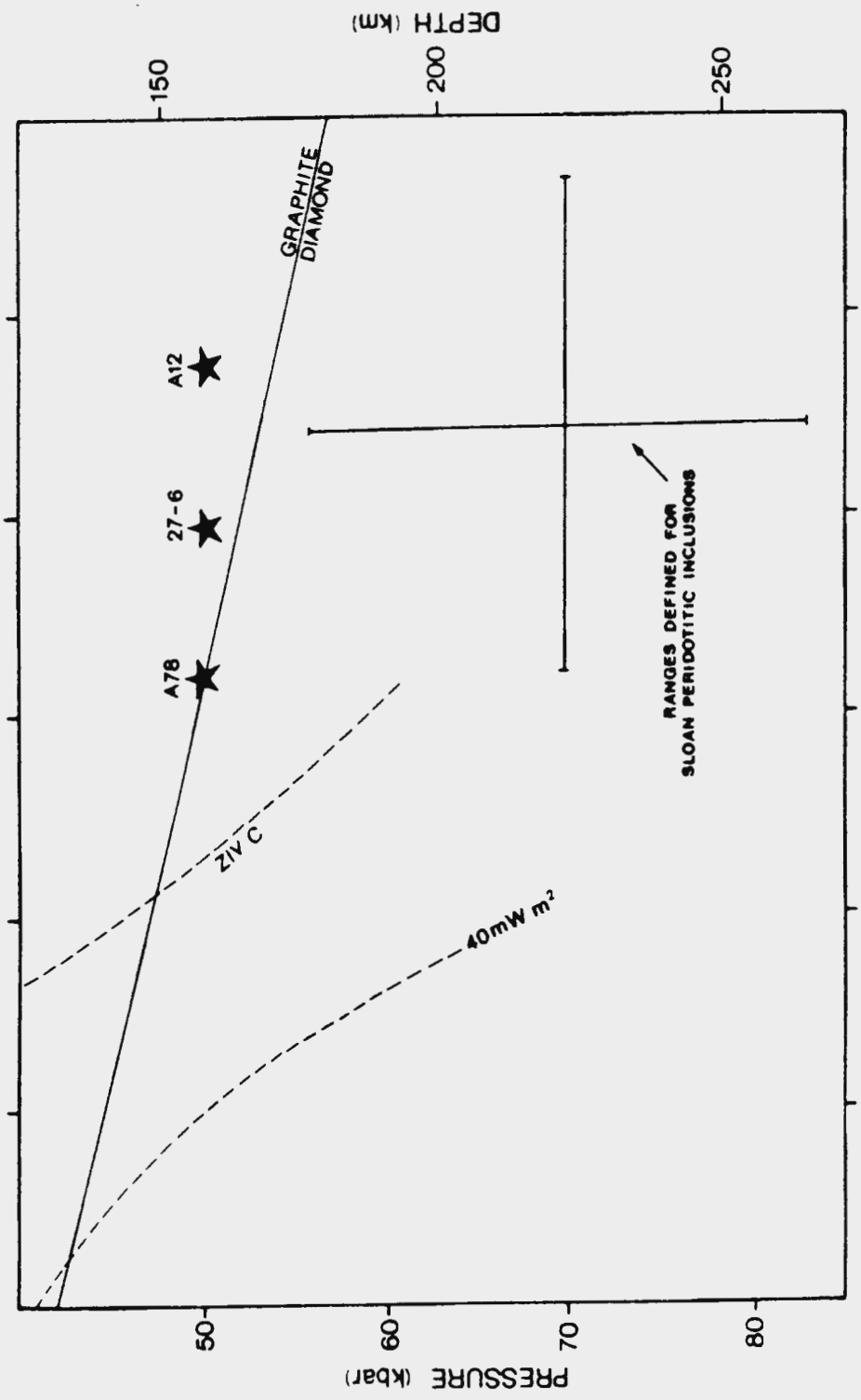


FIGURE 4.10 The ranges of temperature and pressure calculated for peridotitic inclusions in Sloan diamonds. Labelled stars are temperatures plotted assuming 50 kbar. The diamond-graphite equilibrium boundary (Kennedy and Kennedy, 1976), the ZIVC solidus for peridotite in the presence of CO_2 and H_2O (Eggler and Wendlandt 1979) and the 40 mW/m^2 conductive continental geotherm (Pollack and Chapman, 1977) are plotted for reference.

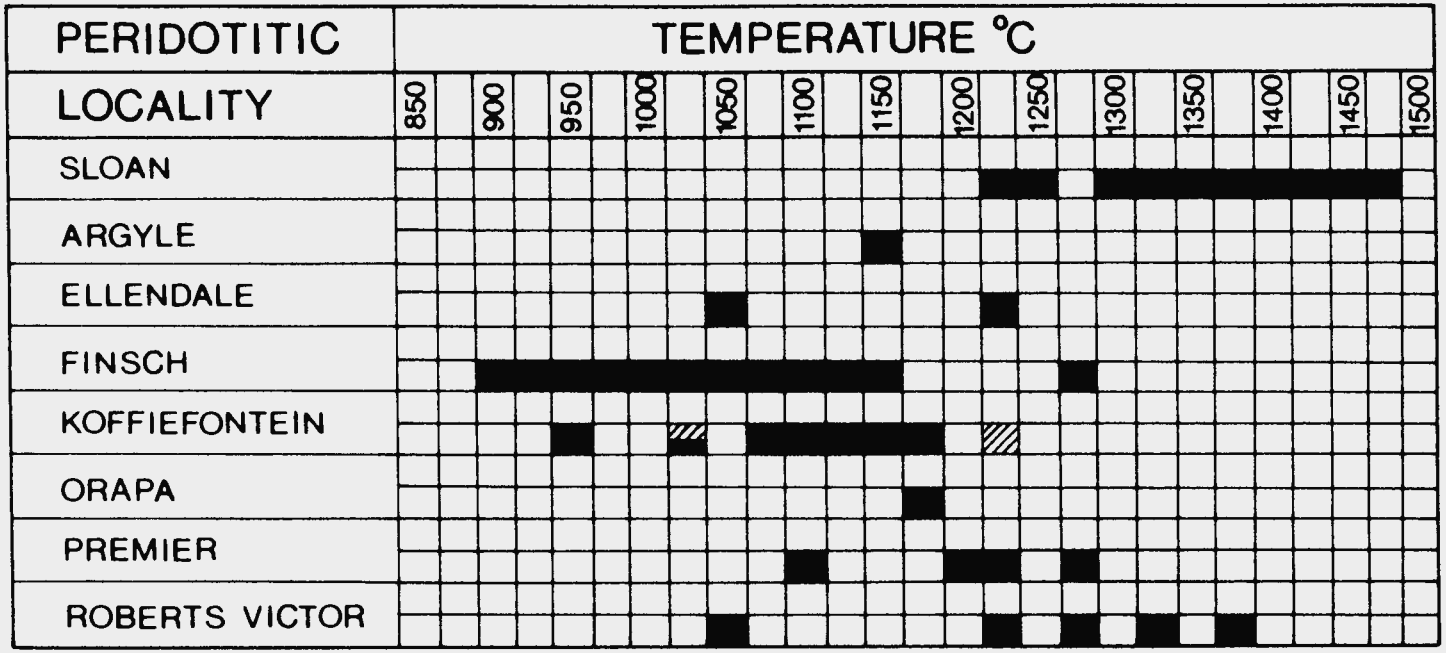


FIGURE 4.11 Temperatures of equilibration for peridotitic inclusions in Sloan diamonds (this study) relative to those found at other localities including Argyle and Ellendale (Jaques et al., 1989), Finsch (Gurney et al., 1979), Koffiefontein (Rickard et al., 1989), Orapa (Gurney et al., 1984a), Premier (Gurney et al., 1986) and Roberts Victor (Gurney et al., 1984b). Hatched boxes for Koffiefontein represent a disequilibrium assemblage of two compositionally distinct Cr-diopsides occurring in a single diamond.

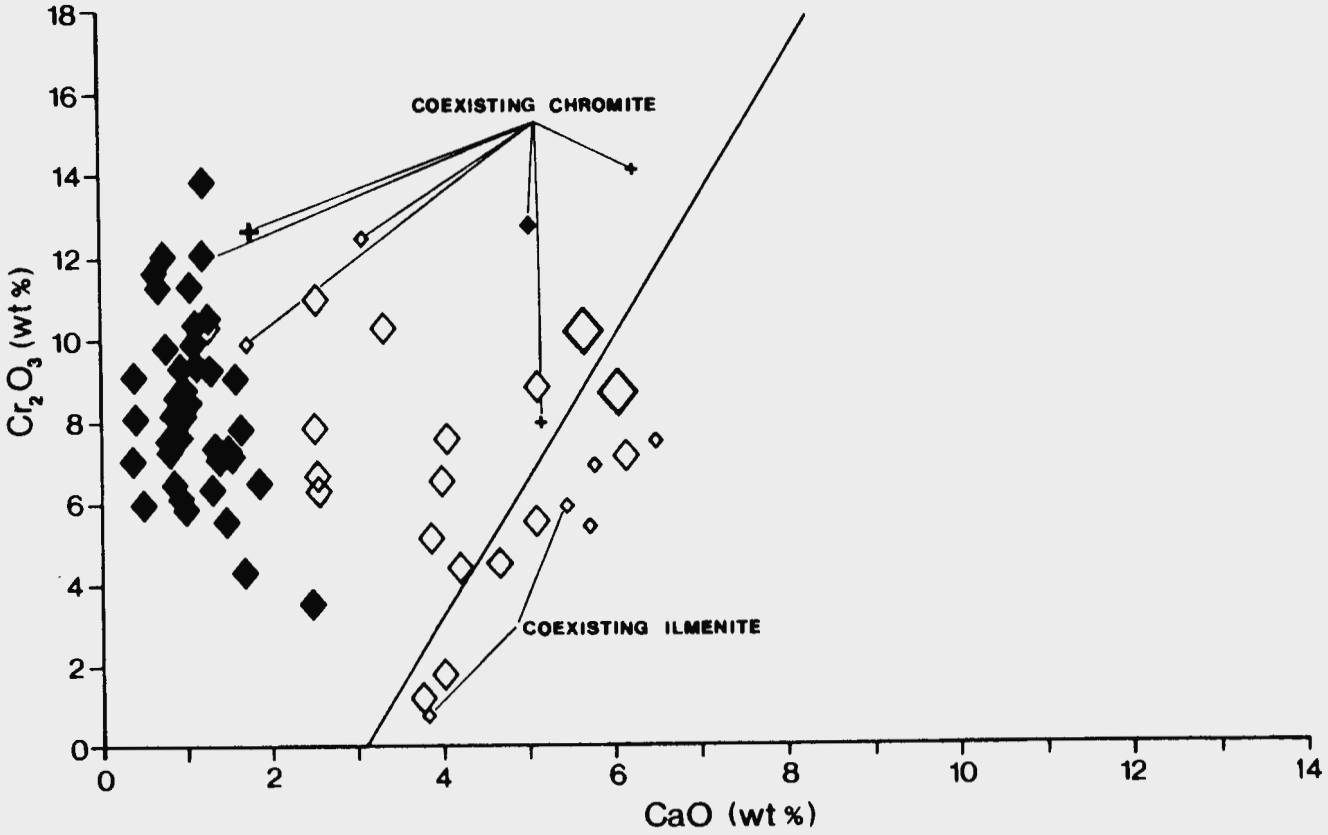


FIGURE 4.12 Variation of CaO with Cr_2O_3 for the peridotite garnet inclusions from Sloan diamonds (large diamonds), those from diamonds elsewhere (medium diamonds, large cross) and those from diamondiferous xenoliths (small diamonds, small crosses). Filled symbols represent garnets coexisting with olivines (Fo > 93.5) and/or orthopyroxene (Mg/Mg+Fe(x100) $\geq$ 94.3). Open symbols represent garnets coexisting with olivine (Fo < 93.5) and/or orthopyroxene (Mg/Mg+Fe(x100) < 94.3). These are plotted in relation to the 85% line of Gurney (1984).

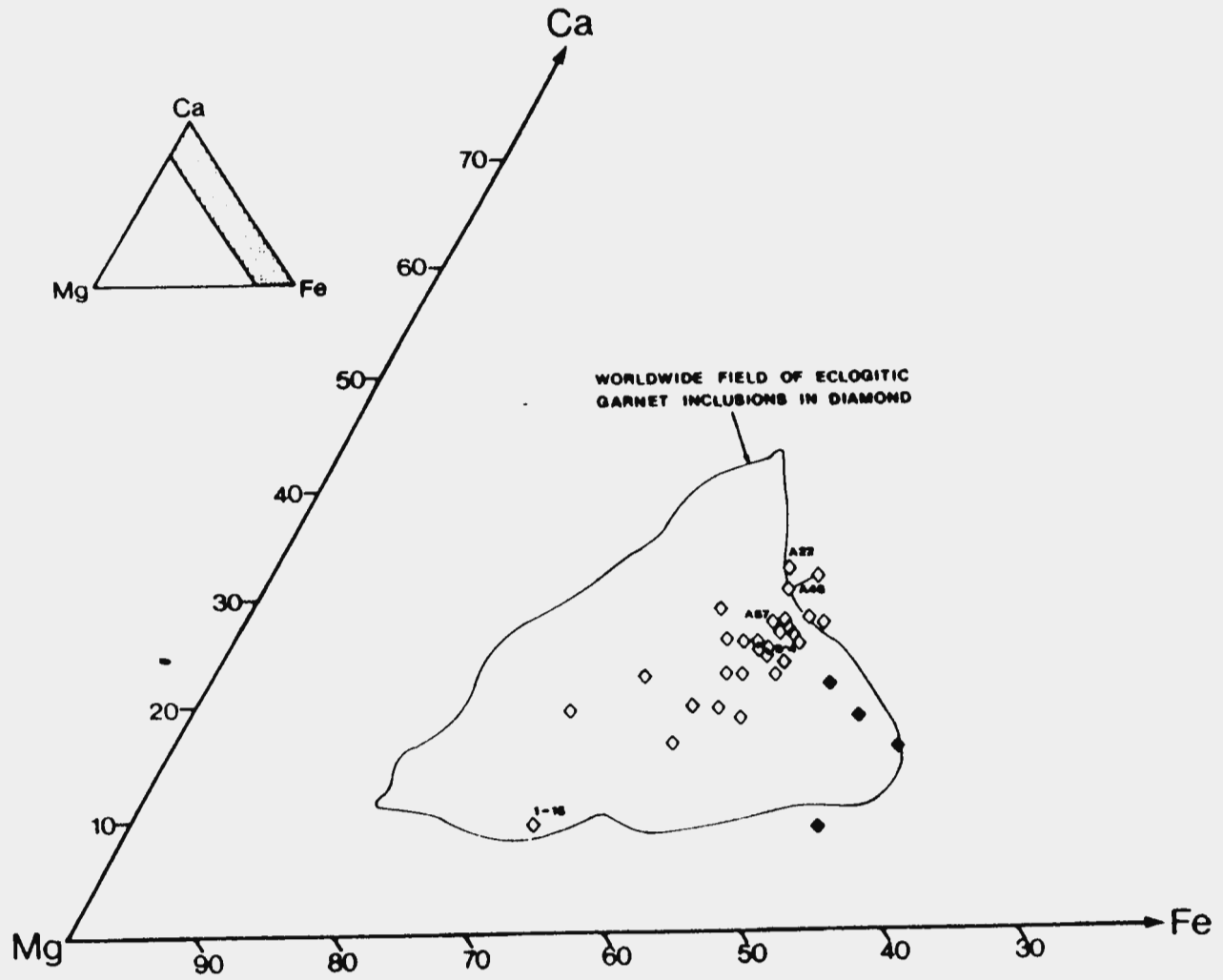


FIGURE 4.13 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing compositional variation of eclogitic pyrope-almandine inclusions in Sloan diamonds (open and filled symbols) relative to the field of eclogitic garnet inclusions from diamonds worldwide. Four Fe-rich garnets represented by closed symbols belong to a group of Mn-enriched garnets as discussed in the text. Inclusions specifically discussed in the text are labelled.

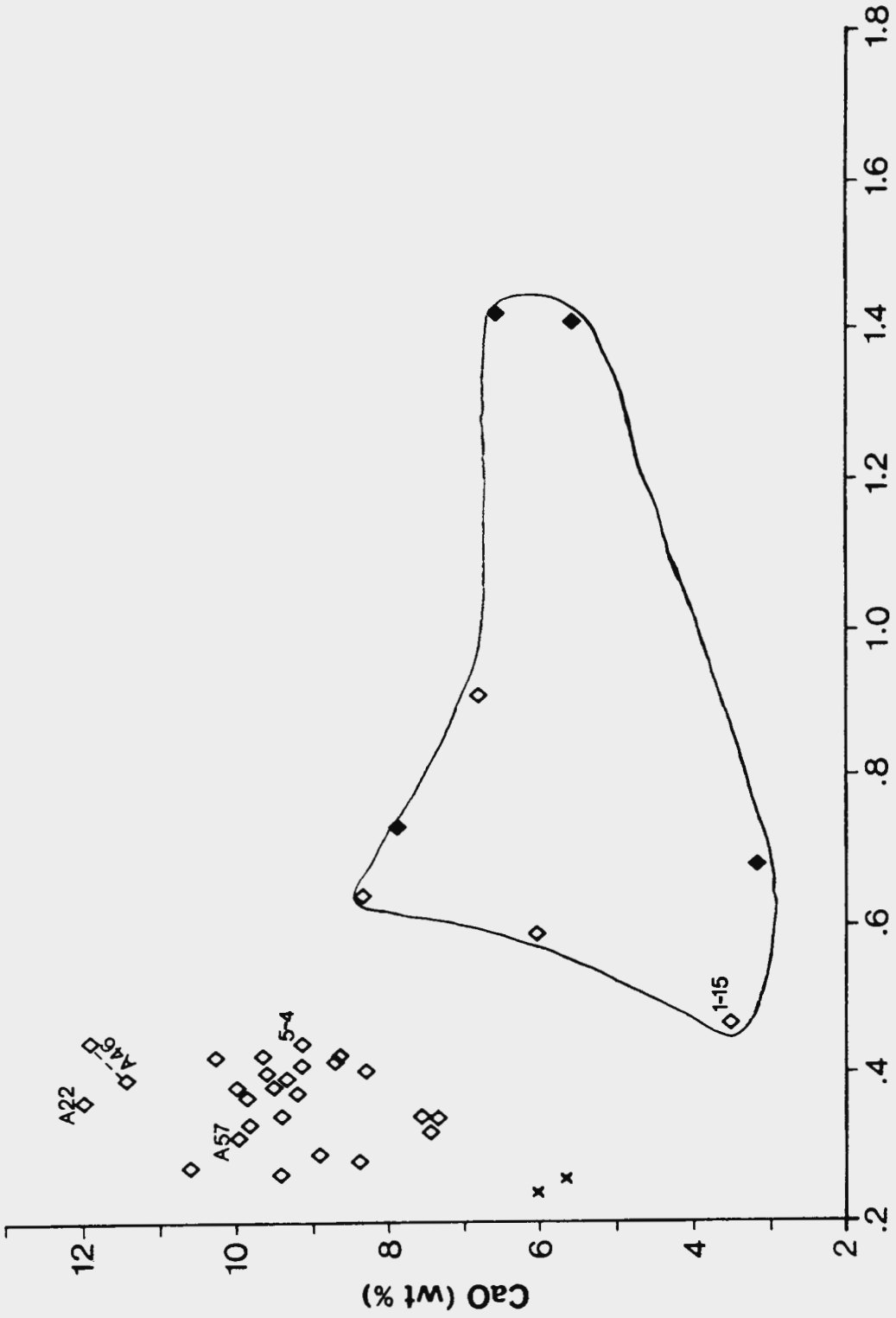


FIGURE 4.14 Variation of MnO with CaO for eclogitic pyrope-almandine inclusions. The four Fe-rich garnets noted in Figure 4.13 (filled symbols) are distinctly Mn-rich and plot in a field along with four other Mn-rich, Ca-poor garnets. Inclusions specifically discussed in the text are labelled.

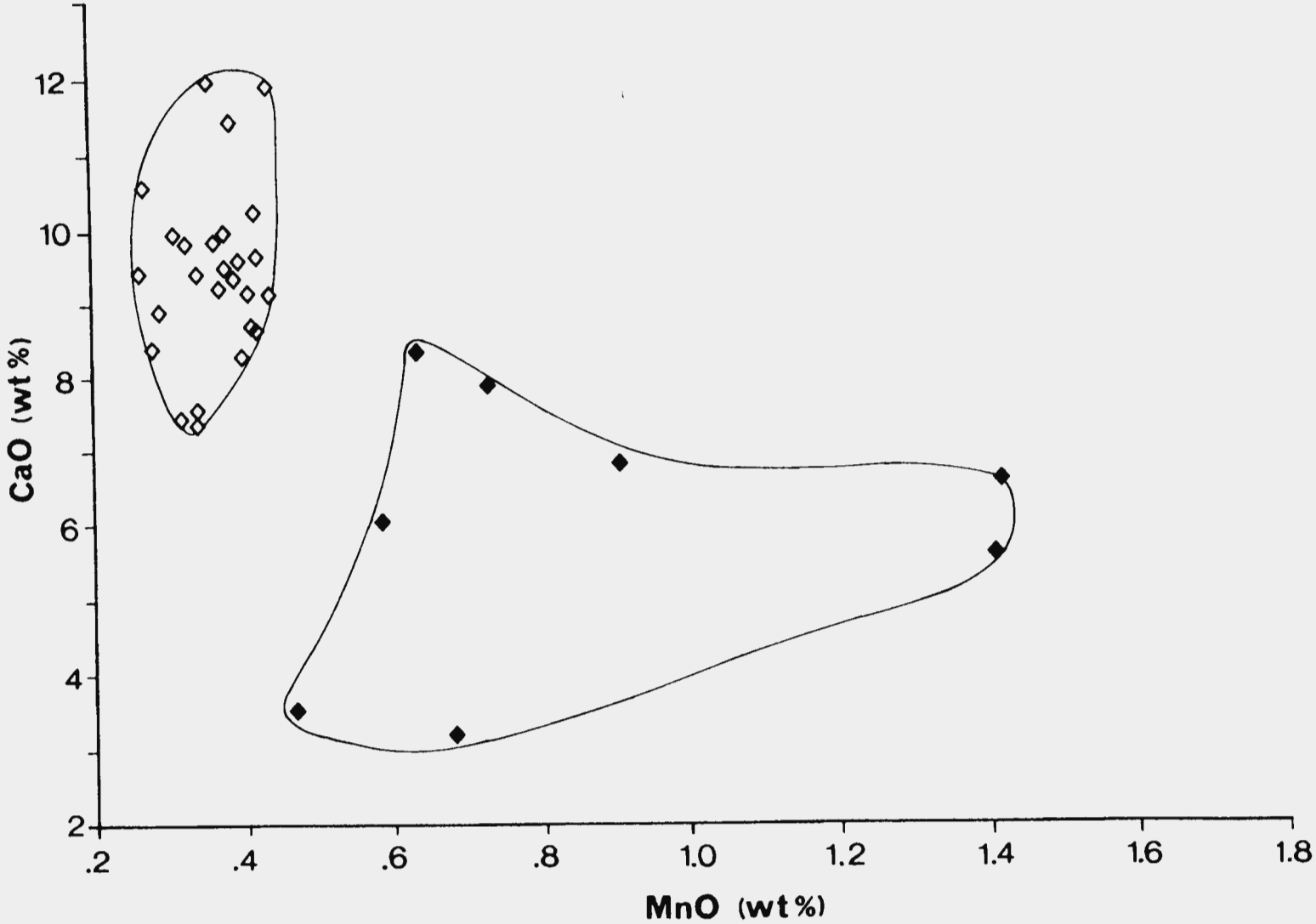


FIGURE 4.15 Variation of MnO with CaO showing defined fields of "Mn-rich" (filled symbols) and "Mn-poor" (open symbols) eclogitic garnets from Sloan diamonds.

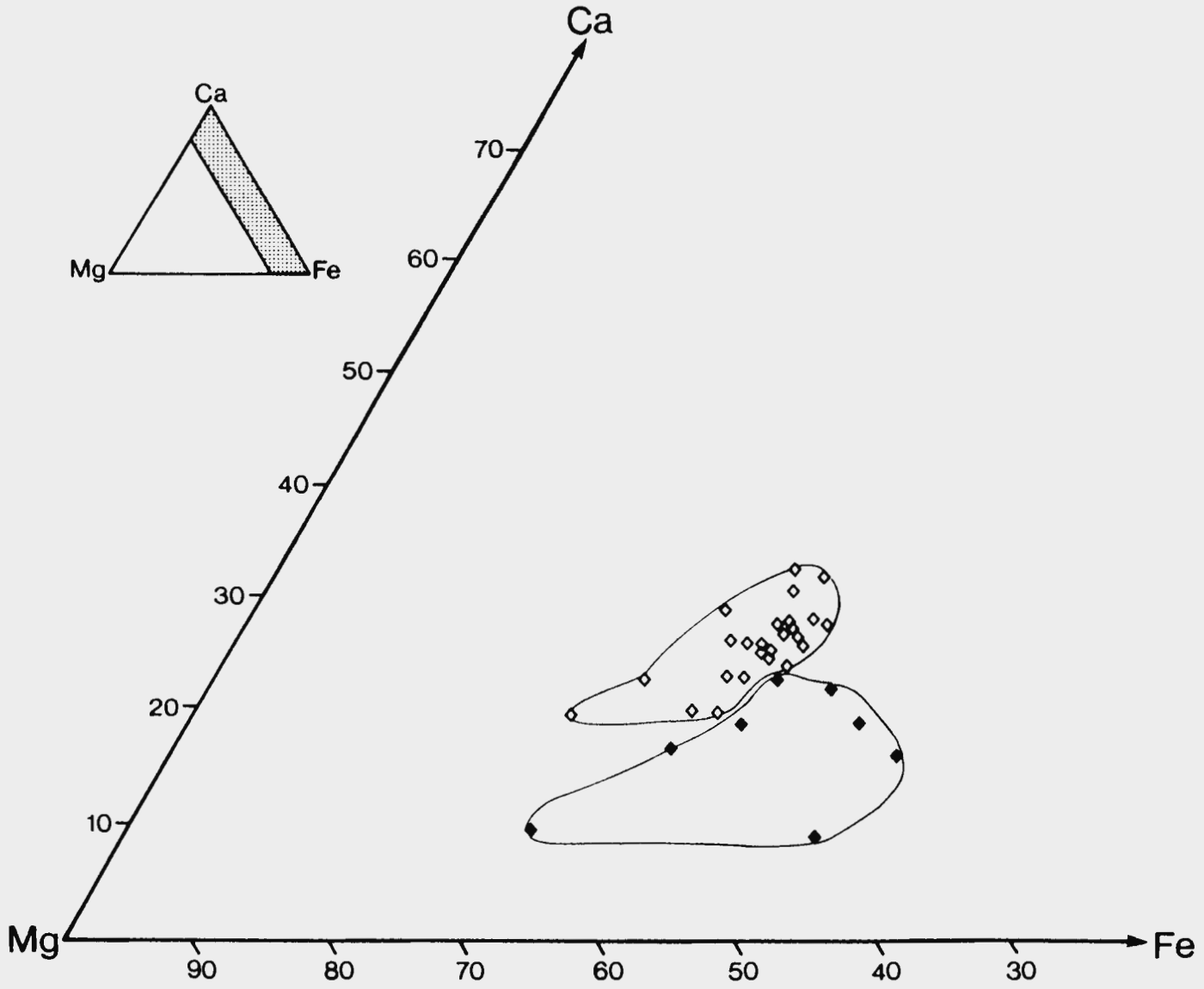


FIGURE 4.16 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the fields of "Mn-rich" (filled symbols) and "Mn-poor" (open symbols) eclogitic garnets from Sloan diamonds.

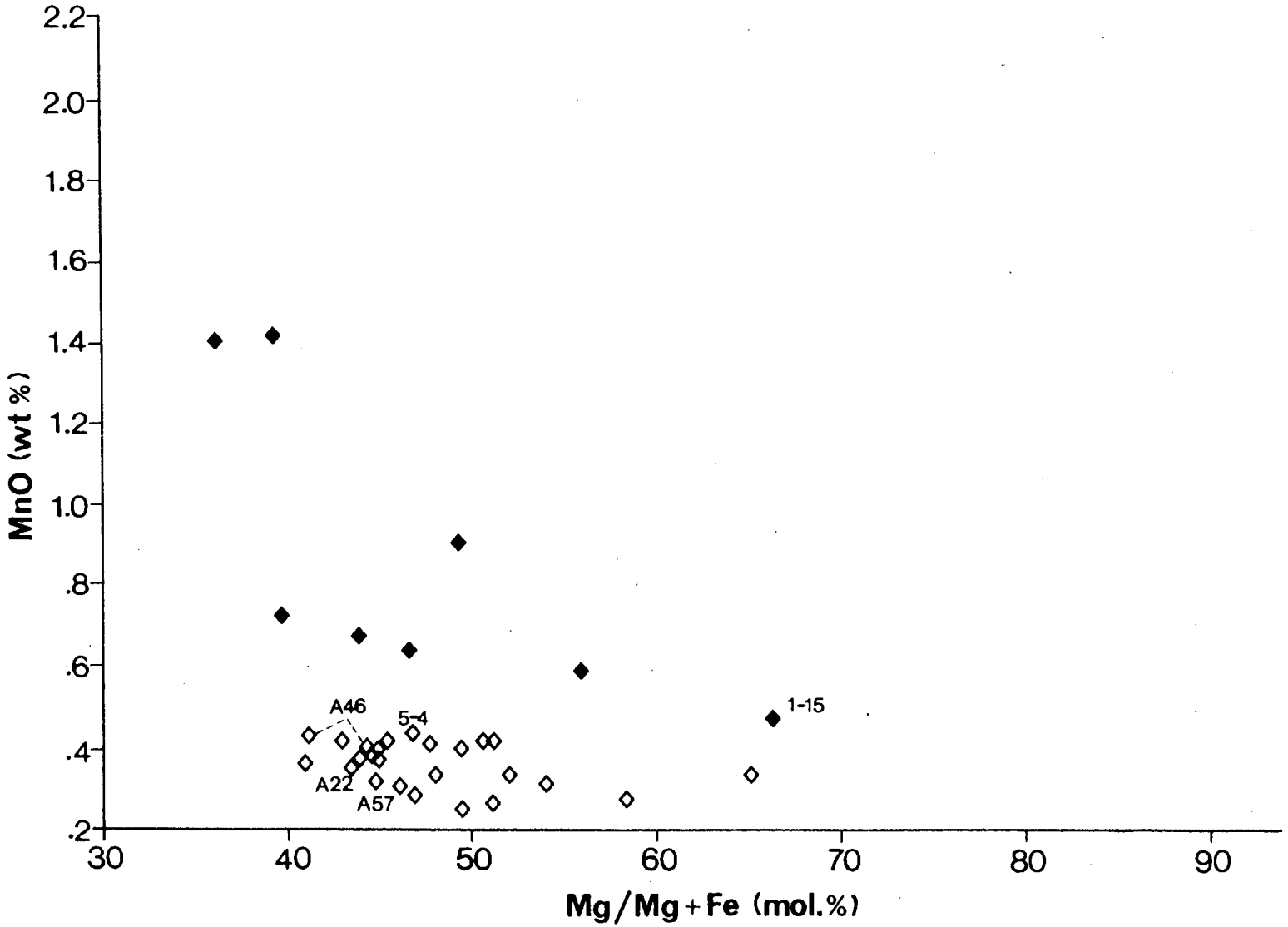


FIGURE 4.17 Variation of Mg/Mg+Fe (mol.%) with MnO for eclogitic pyrope-almandine inclusions in Sloan diamonds. The closed symbols are the group of Mn-rich garnets (as indicated in Figures 4.15 and 4.16). Note that these garnets define a broad trend of decreasing Mg/Mg+Fe with increasing manganese. Inclusions specifically discussed in the text are labelled.

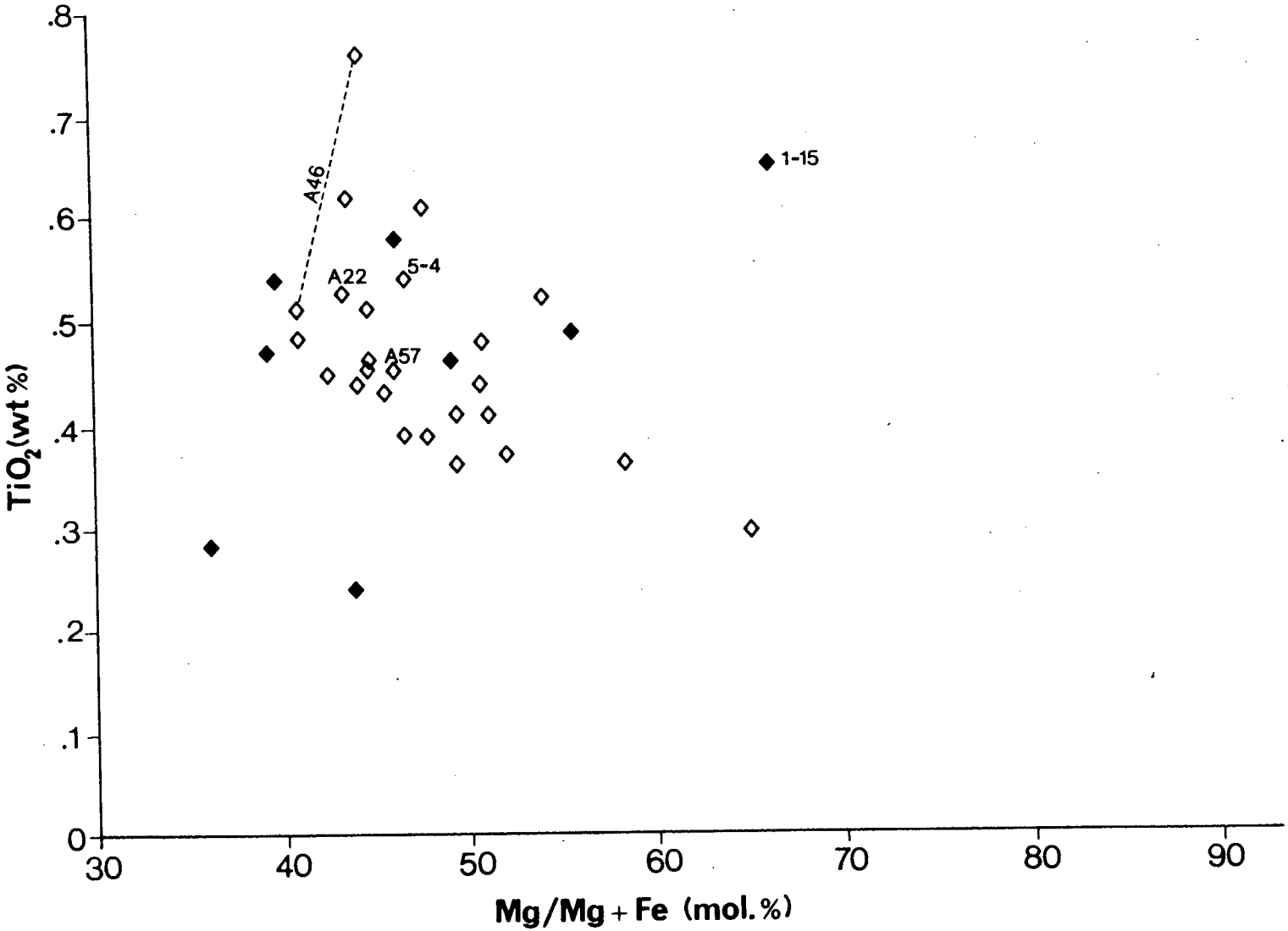


FIGURE 4.18 Variation of Mg/Mg+Fe (mol.%) with TiO_2 for eclogitic pyrope-almandine inclusions from Sloan diamonds. Note the broad trend of increasing titanium with decreasing Mg/Mg+Fe for the Mn-poor garnets (open symbols), whereas Mn-rich garnets show no such correlation.

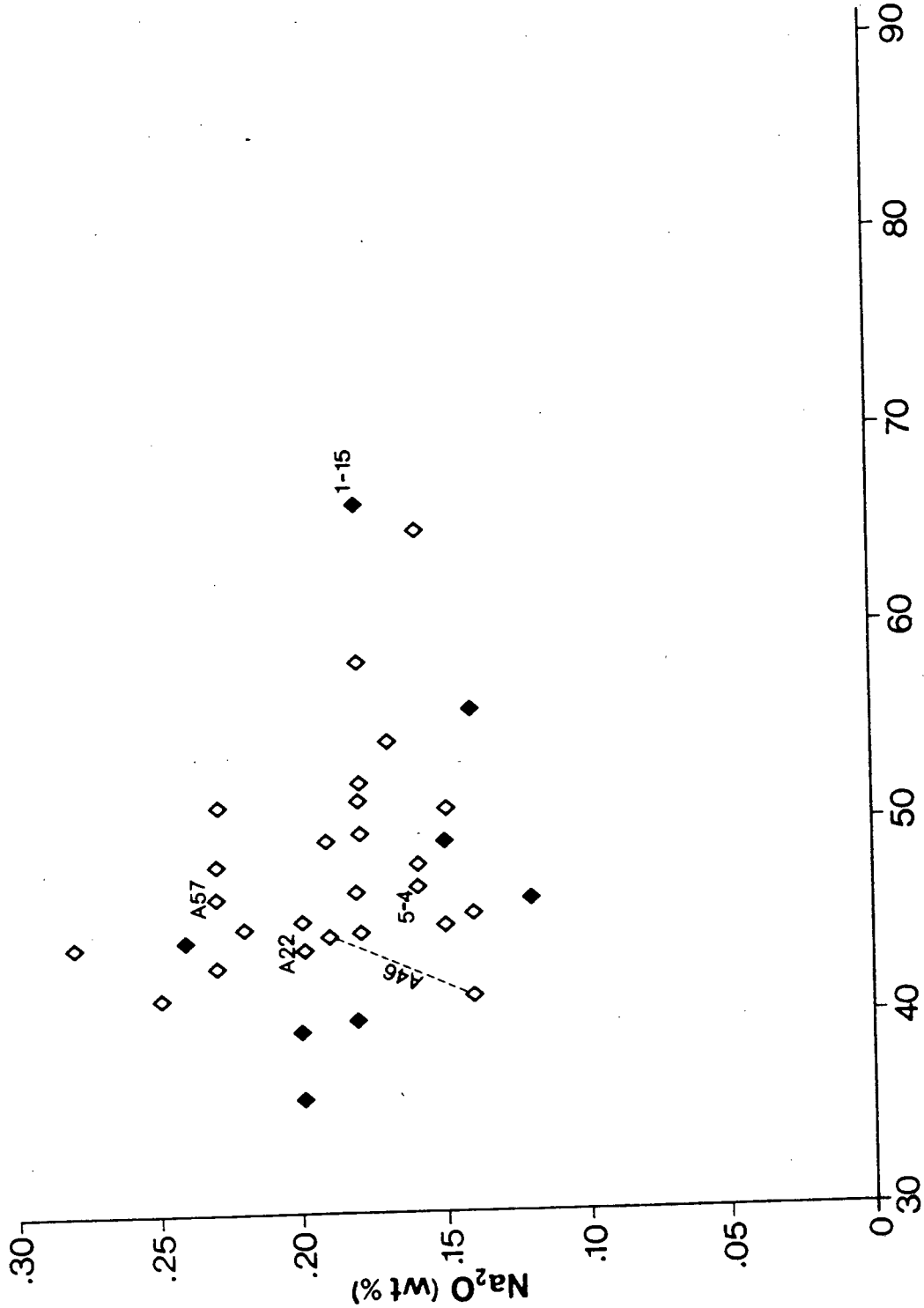


FIGURE 4.19 Variation of Mg/Mg+Fe (mol%) with Na_2O for eclogitic pyrope-almandine inclusions from Sloan diamonds. No systematic correlation is found between these parameters for either the Mn-rich garnets (filled symbols) or the Mn-poor garnets (open symbols).

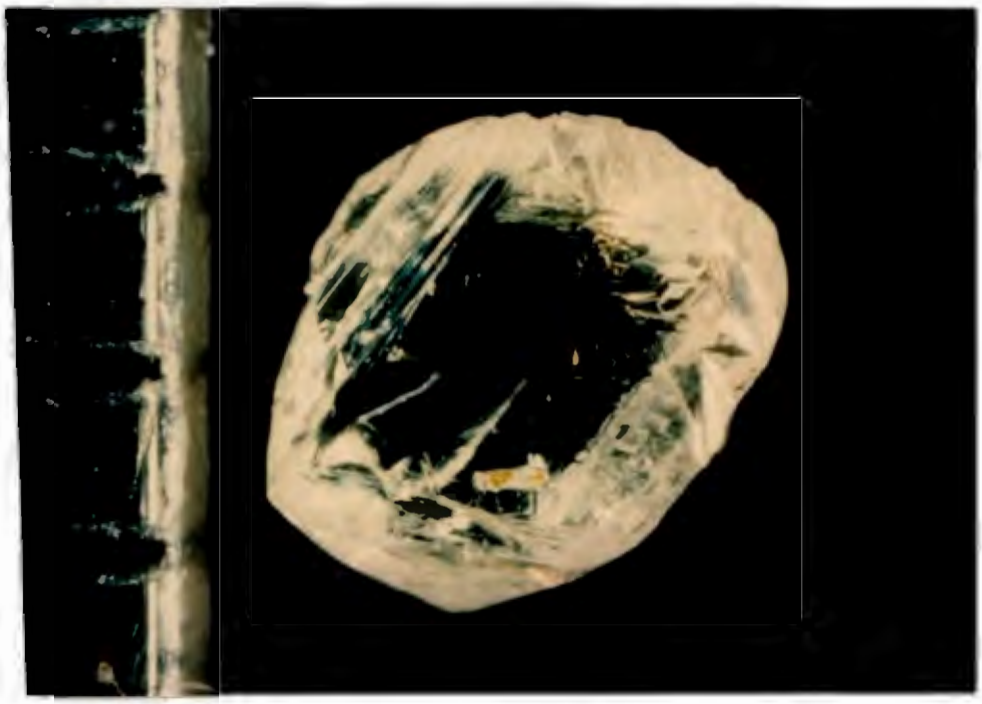


FIGURE 4.20 (a) Photograph of Sloan diamond SL 1-15 (.12 carat) showing a single bimineralic inclusion of pyrope-almandine and omphacitic clinopyroxene. It is essentially an inhomogeneous, bimineralic eclogite. (mm scale on left).

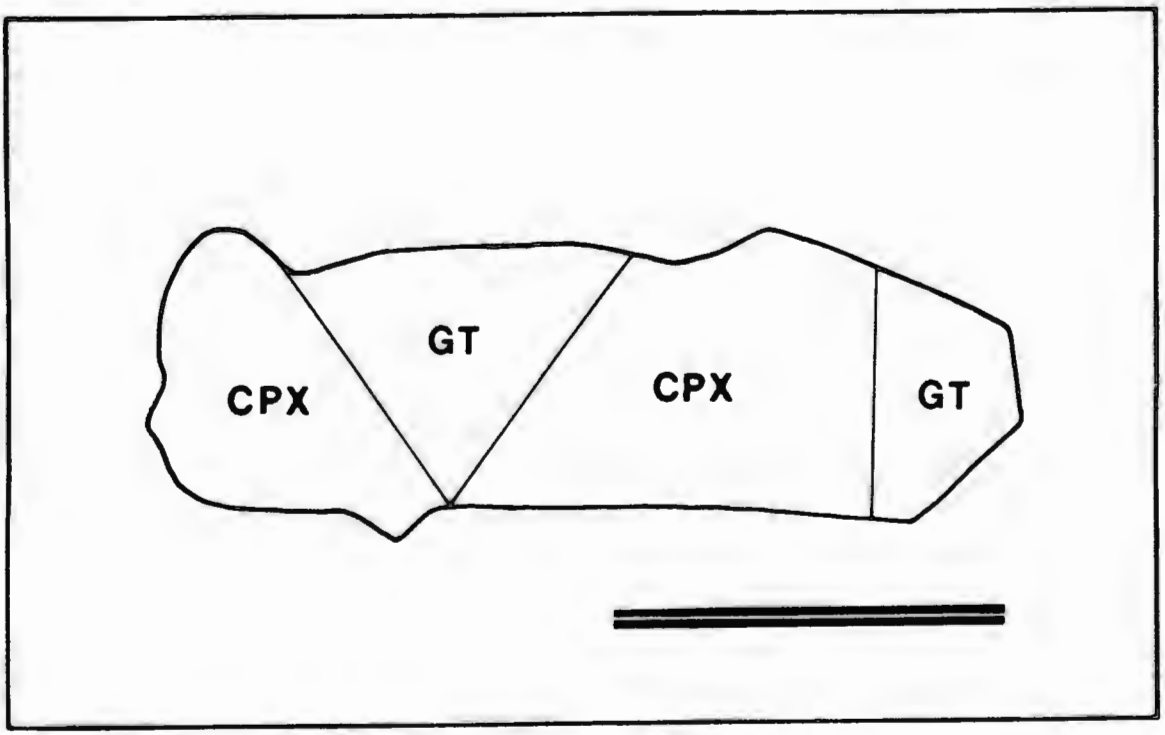
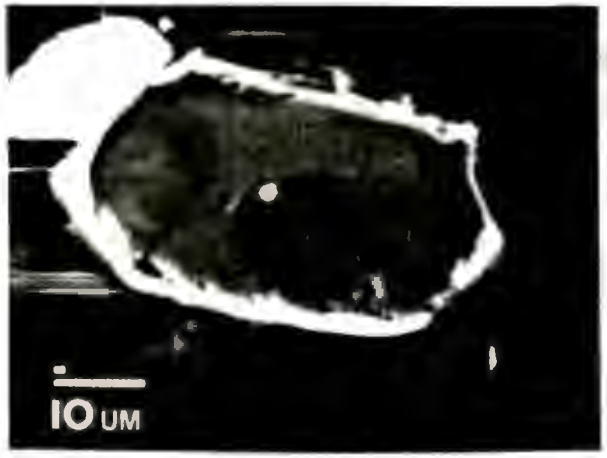


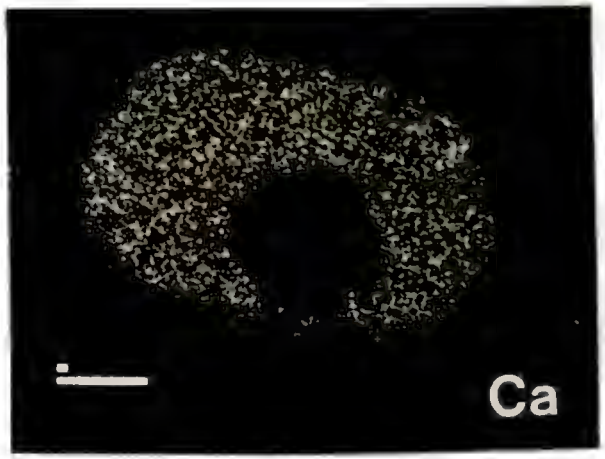
FIGURE 4.20 (b) A schematic diagram of the inhomogeneous, bimineralic eclogite inclusion in diamond SL 1-15. Clinopyroxenes with two different compositions are present; garnets have the same composition. Scale bar = 100 μm.

FIGURE 4.21 a) SEM photomicrograph of a pyrope-almandine inclusion recovered from diamond SL A22 which has a spherical inclusion of pure SiO_2, as shown by secondary X-ray images (b, c, and d). The SiO_2 inclusion is inferred to be primary coesite.


10 UM


Al


Si


Ca

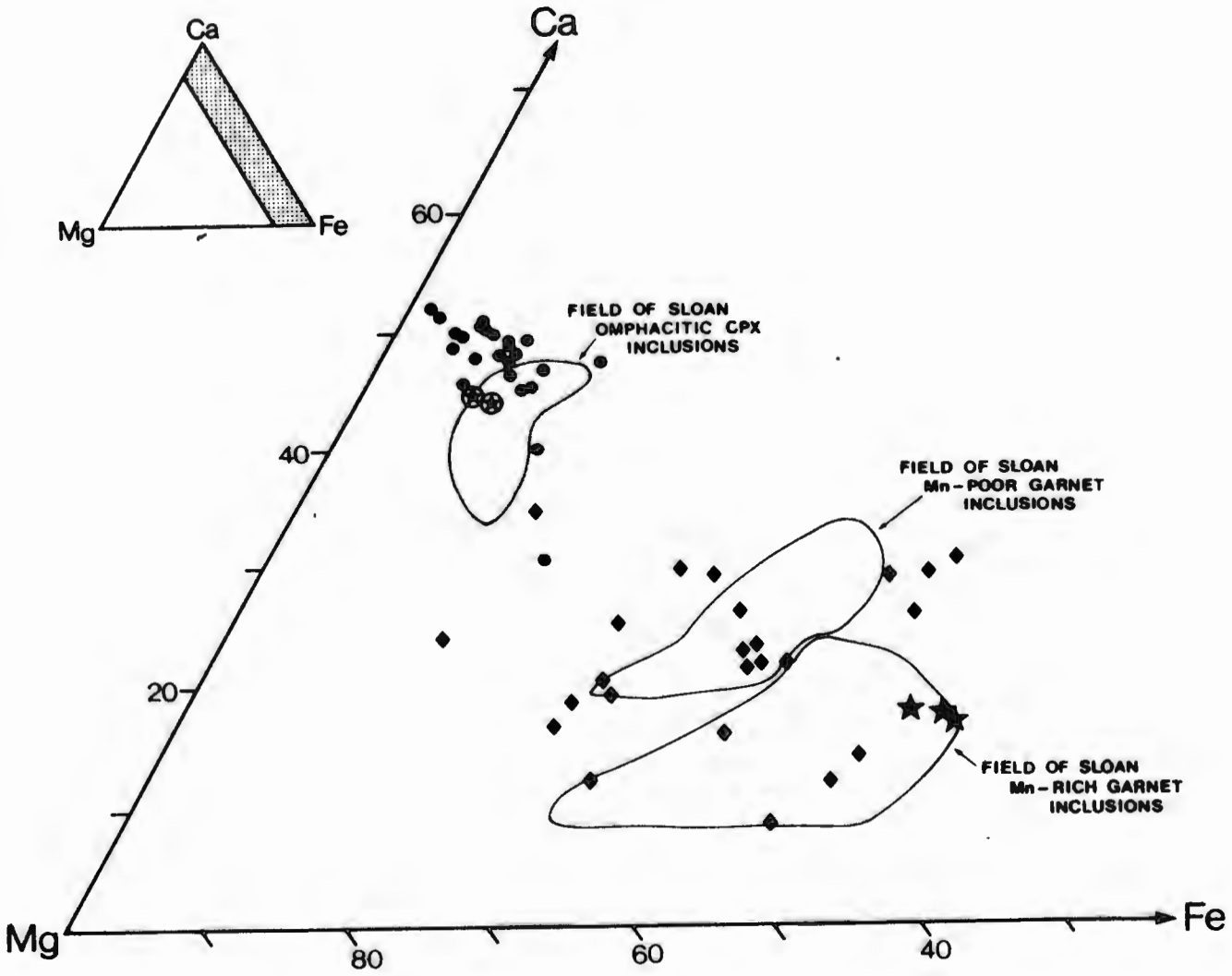


FIGURE 4.22 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the composition of metaluminous (Ater, 1982; Ater et al., 1984) eclogite xenolith garnets (filled diamonds) and clinopyroxenes (filled circles) in relation to inclusion garnet and clinopyroxene compositional fields as labelled. Also shown are Sloan diamondiferous eclogite garnet (stars) and clinopyroxene (circled stars) compositions.

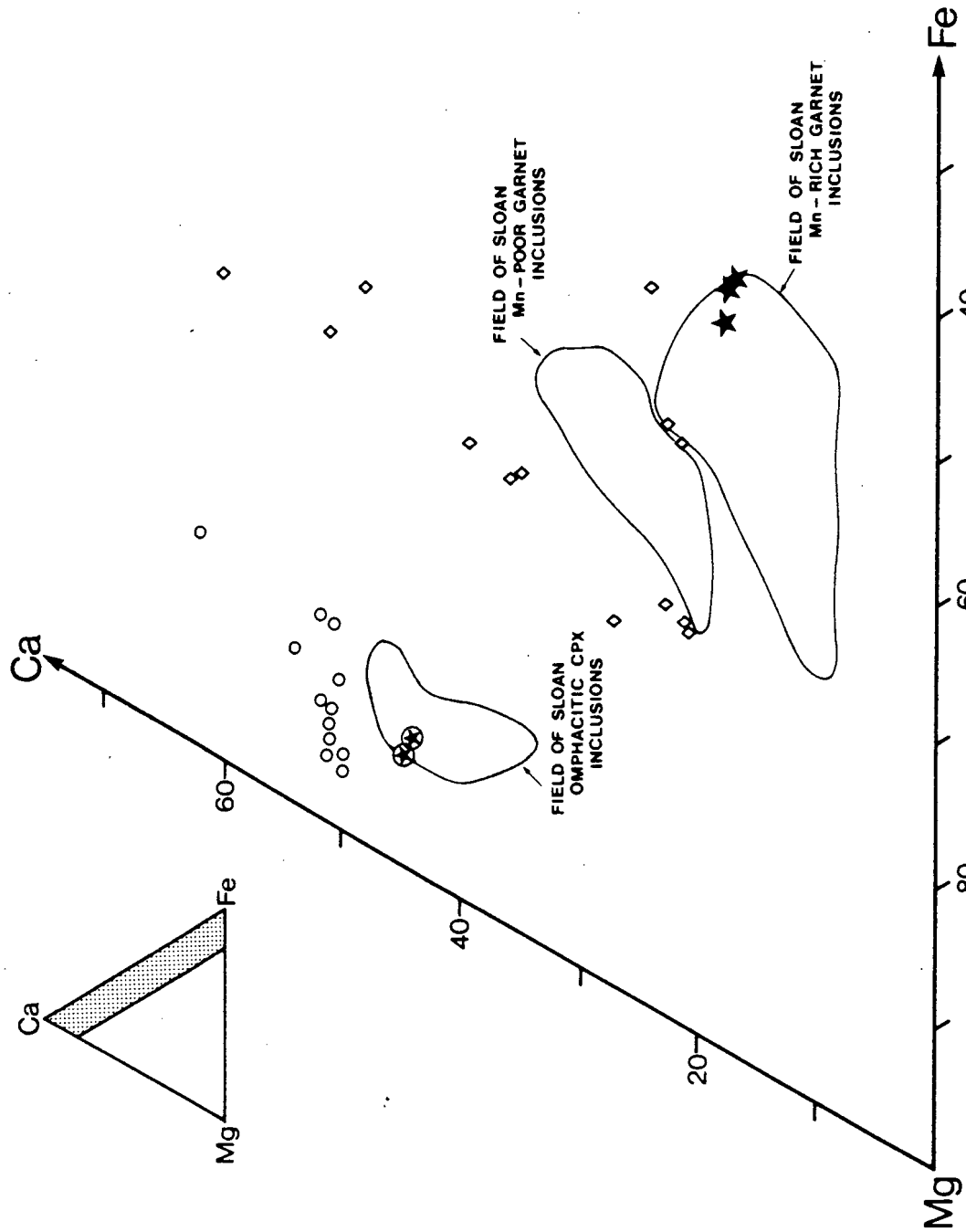


FIGURE 4.23 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the composition of peraluminous (Ater, 1982; Ater et al., 1984) xenolith garnets (open diamonds) and clinopyroxenes (open circles) in relation to inclusion garnet and clinopyroxene compositional fields as labelled. Also shown are diamondiferous eclogite garnet (stars) and clinopyroxene (circled stars) compositions.

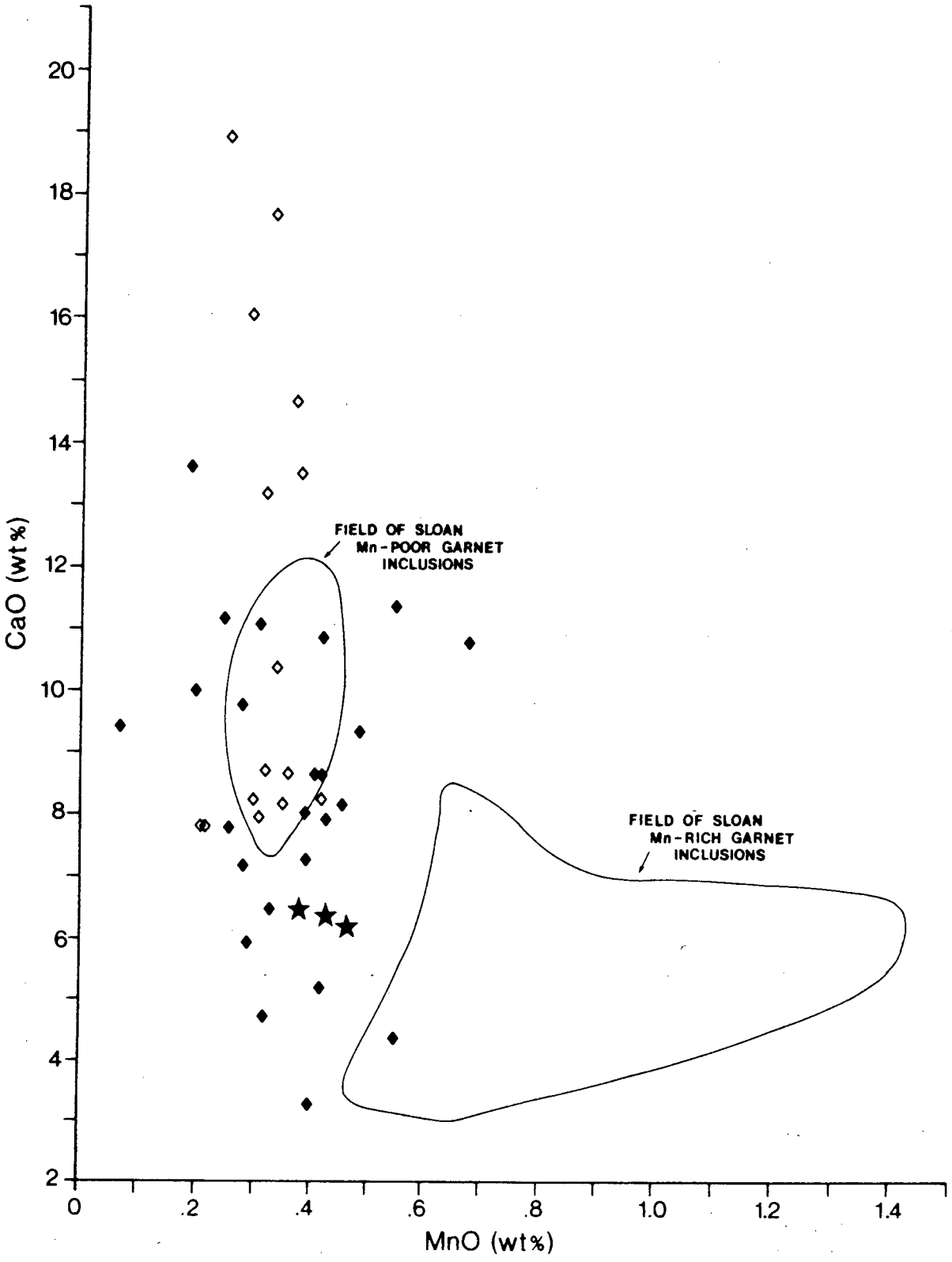


FIGURE 4.24 Variation of MnO with CaO showing composition of metaluminous (filled diamonds) and peraluminous (open diamonds) eclogite garnets in relation to the Mn-rich and Mn-poor garnet inclusion fields defined in this study. Also plotted are Sloan diamondiferous eclogite garnet compositions (stars) from McCandless and Collins (1989) and this study.

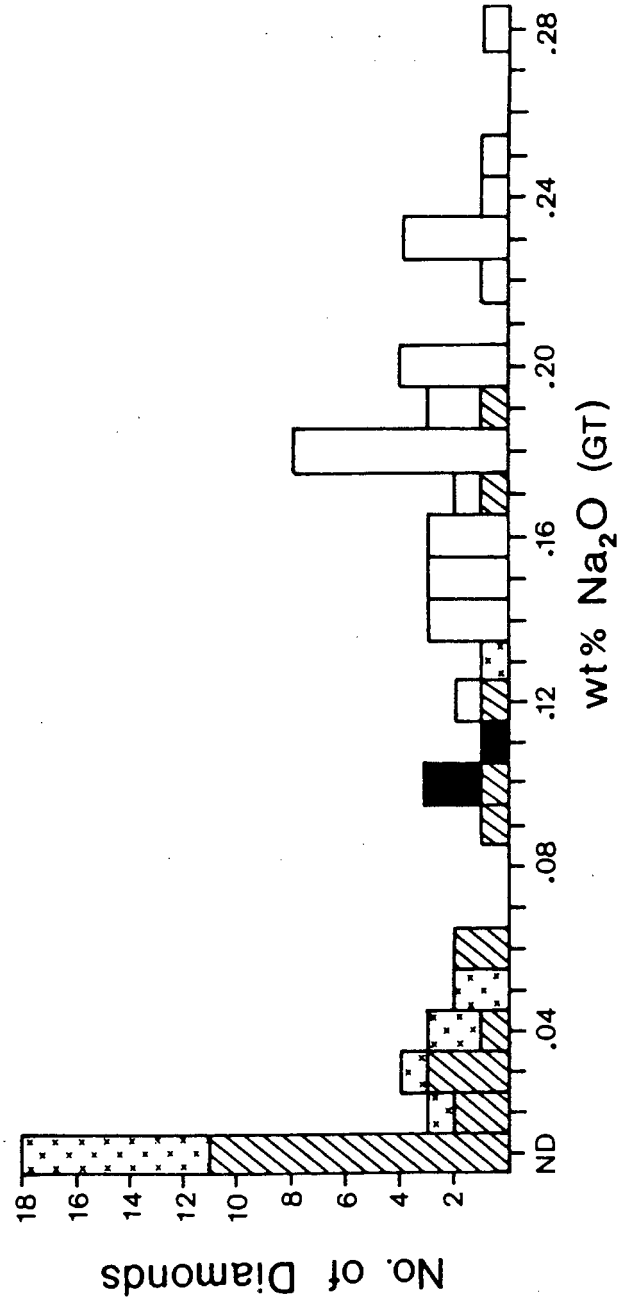


FIGURE 4.25 Histogram of Na_2O in eclogitic inclusion garnets (open) diamondiferous eclogite xenolith garnets (filled), metaluminous eclogite xenolith garnets (hatched) and peraluminous eclogite xenolith garnets (stippled). ND = Not detected.

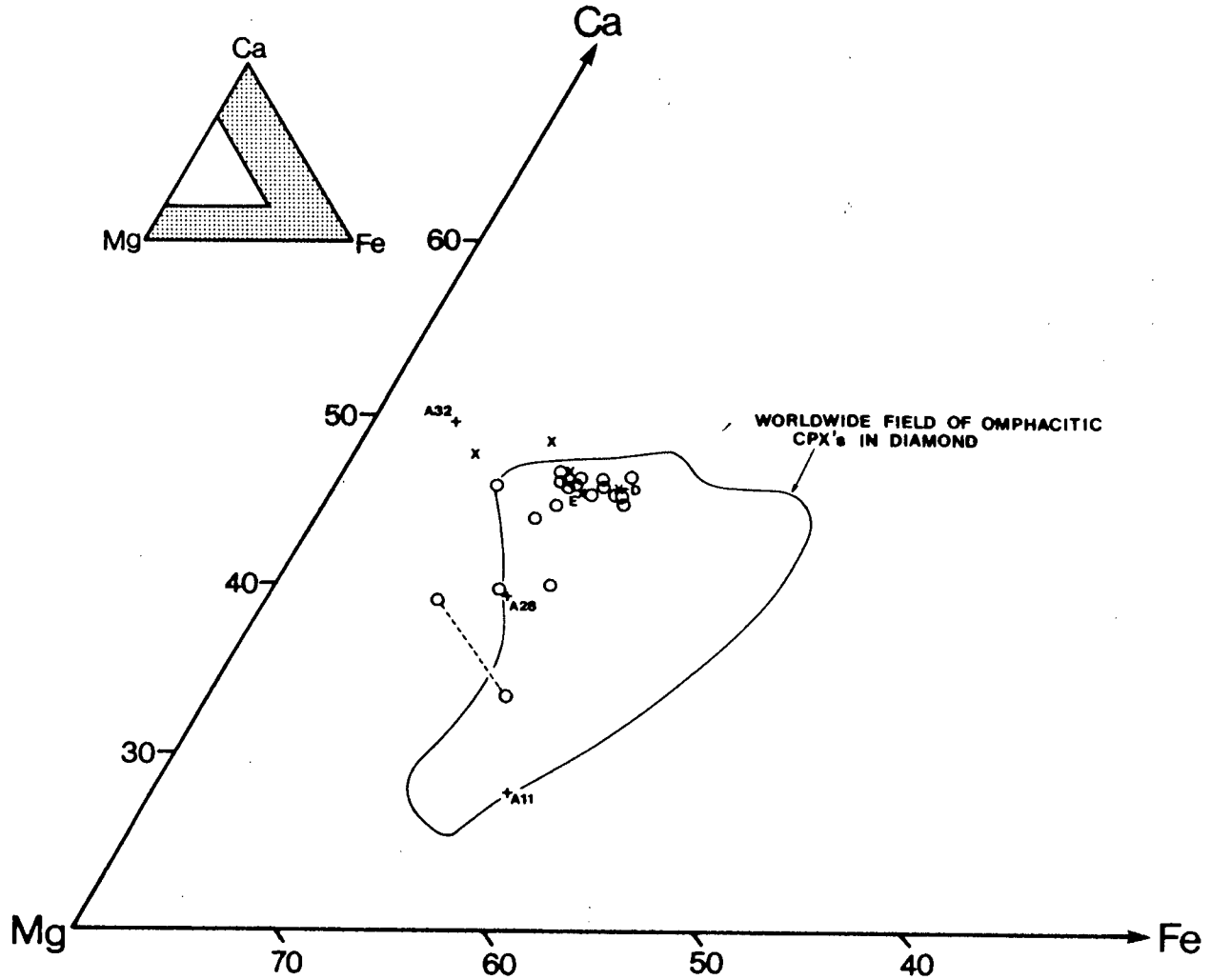


FIGURE 4.26 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the composition of clinopyroxene inclusions from Sloan diamonds relative to those recovered from diamonds worldwide. Both primary (open circles) and possibly primary (+) clinopyroxenes are shown. Clinopyroxenes recovered by Meyer and McCallum (1986) (x) are also plotted. Clinopyroxenes specifically discussed in the text are labelled.

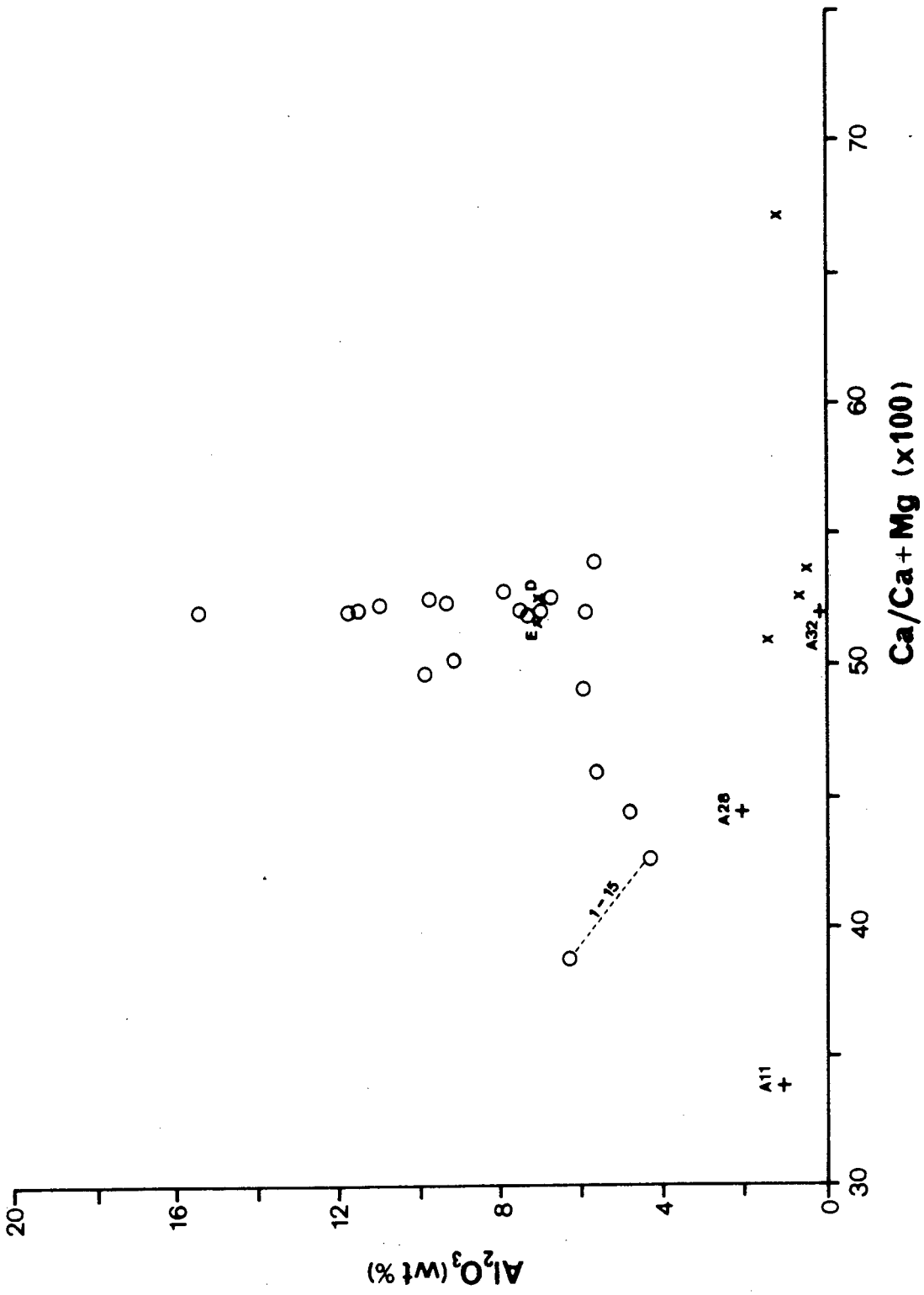


FIGURE 4.27 Variation of Ca/Ca+Mg with Al_2O_3 showing the composition of clinopyroxene inclusions from Sloan diamonds. Both primary clinopyroxenes (open circles) and possibly primary clinopyroxenes (+) are shown. Clinopyroxenes recovered by Meyer and McCallum (1986) (x) are also plotted. The clinopyroxenes specifically discussed in the text are labelled.

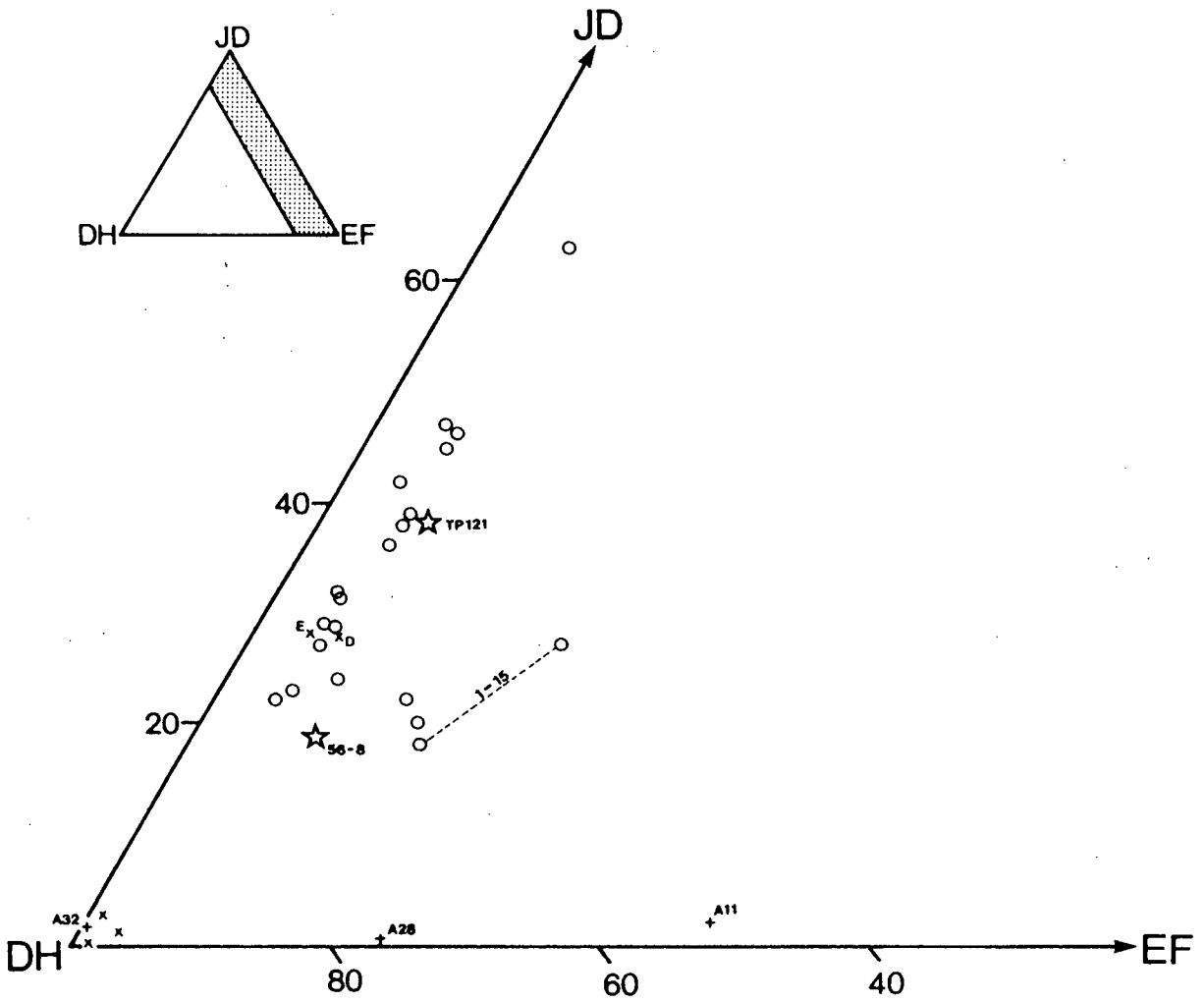


FIGURE 4.28 Portion of the Jadeite (JD) - Diopside/Hedenbergite (HD) - Enstatite/Ferrosilite (EF) ternary diagram (top left, unstippled area) showing the composition of clinopyroxene inclusions from Sloan diamonds. Both primary clinopyroxenes (open circles) and possibly primary clinopyroxenes (+) are plotted. Clinopyroxenes recovered by Meyer and McCallum (1986) (x) are also plotted. Also plotted are the clinopyroxenes (stars) from the two diamondiferous eclogites recovered from Sloan (McCandless and Collins, 1989; this study). The clinopyroxenes specifically discussed in the text are labelled.

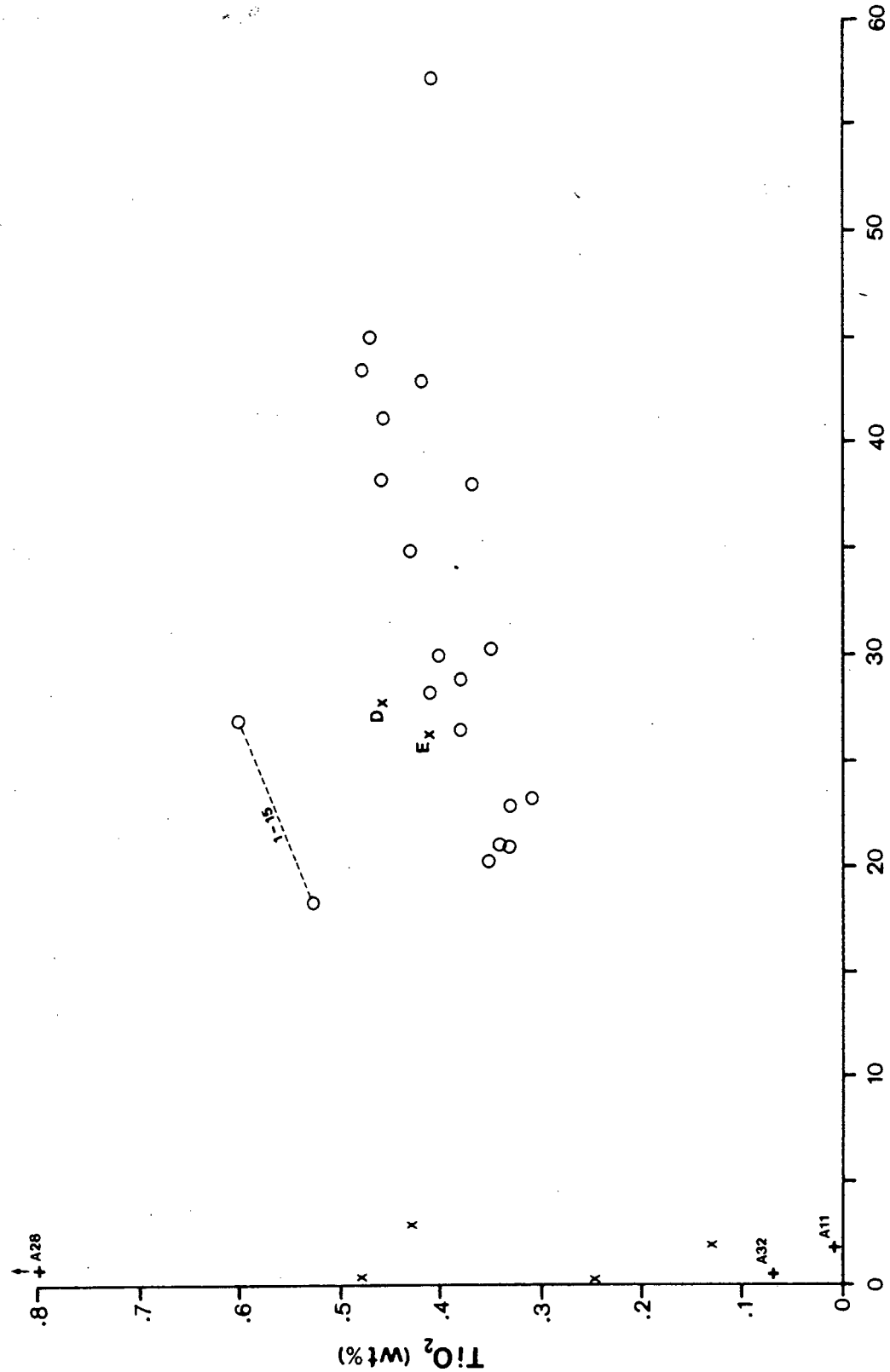


FIGURE 4.29 Variation of Jadeite with TiO_2 showing the composition of clinopyroxene inclusions from Sloan diamonds. Both primary clinopyroxenes (open circles) and possibly primary clinopyroxenes (+) are plotted. Clinopyroxenes recovered by Meyer and McCallum (1986) (x) are also plotted. The clinopyroxenes specifically discussed in the text are labelled.

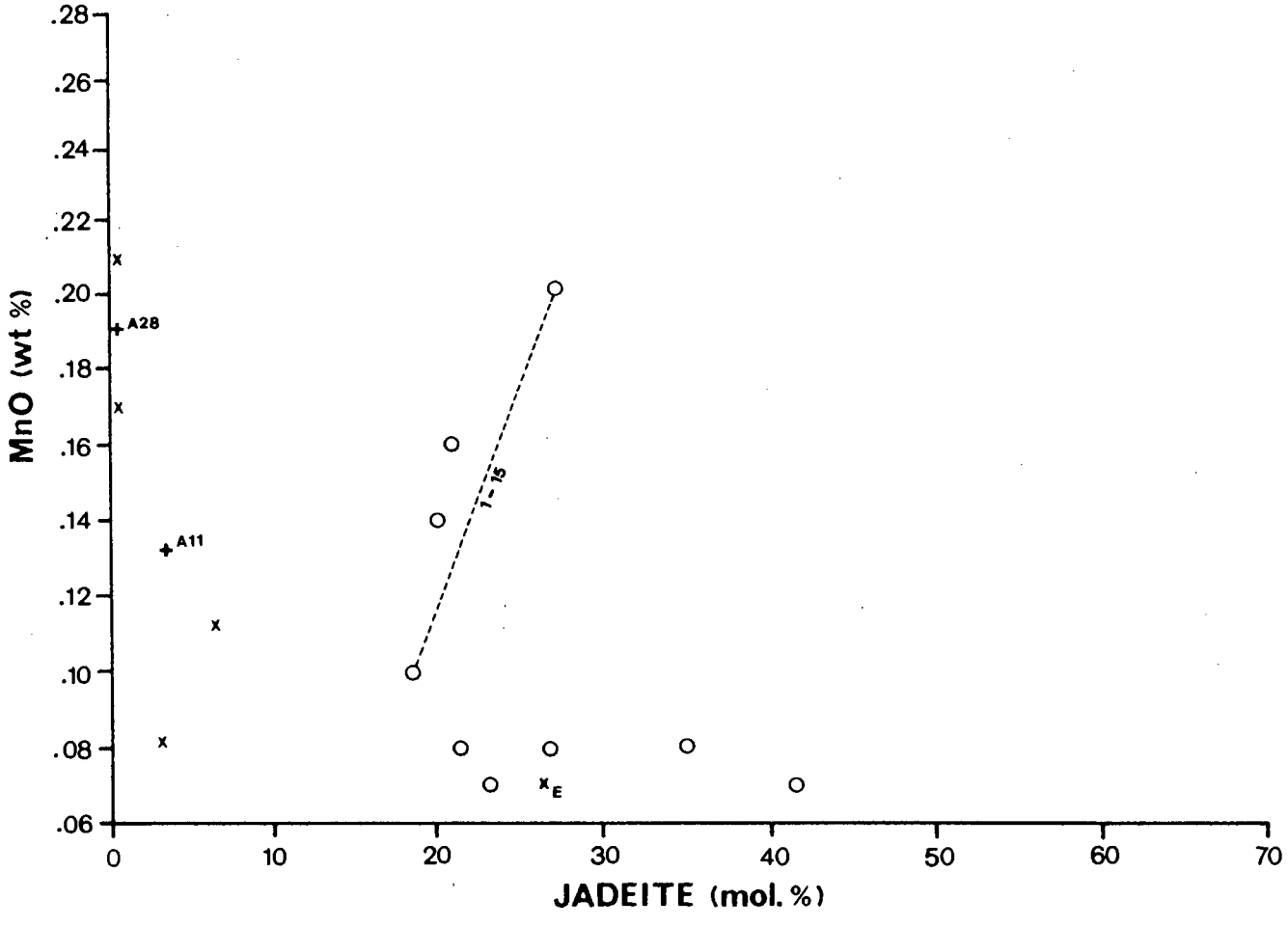


FIGURE 4.30 Variation of Jadeite with MnO showing the composition of clinopyroxene inclusions from Sloan diamonds. Both primary clinopyroxenes (open circles) and possibly primary clinopyroxenes (+) are plotted. Clinopyroxenes recovered by Meyer and McCallum (1986) (x) are also plotted. The clinopyroxenes specifically discussed in the text are labelled.

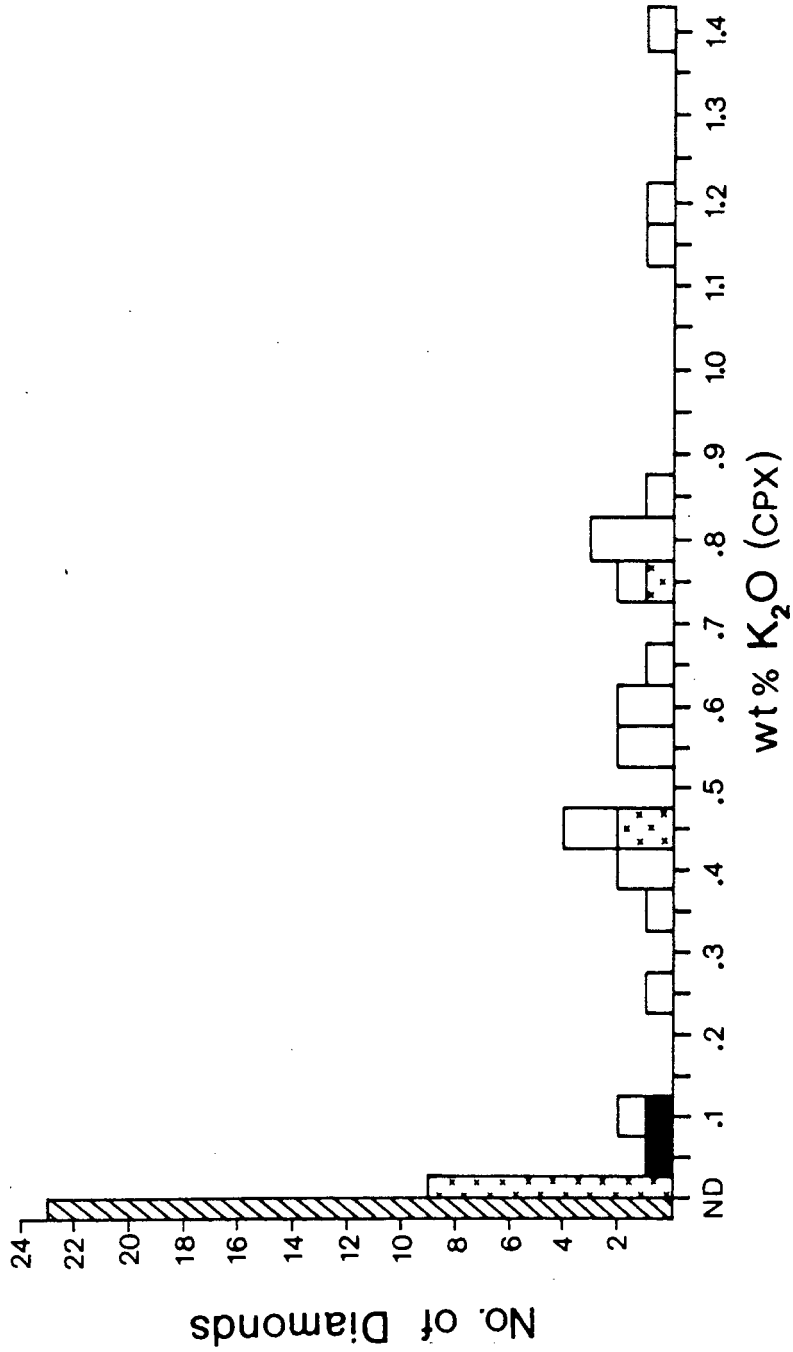


FIGURE 4.31 Histogram of K_2O in eclogitic inclusion clinopyroxenes (open), diamondiferous eclogite xenolith clinopyroxenes (filled), metaluminous eclogite xenolith clinopyroxenes (hatched) and peraluminous eclogite xenolith clinopyroxenes (stippled). ND = Not detected.

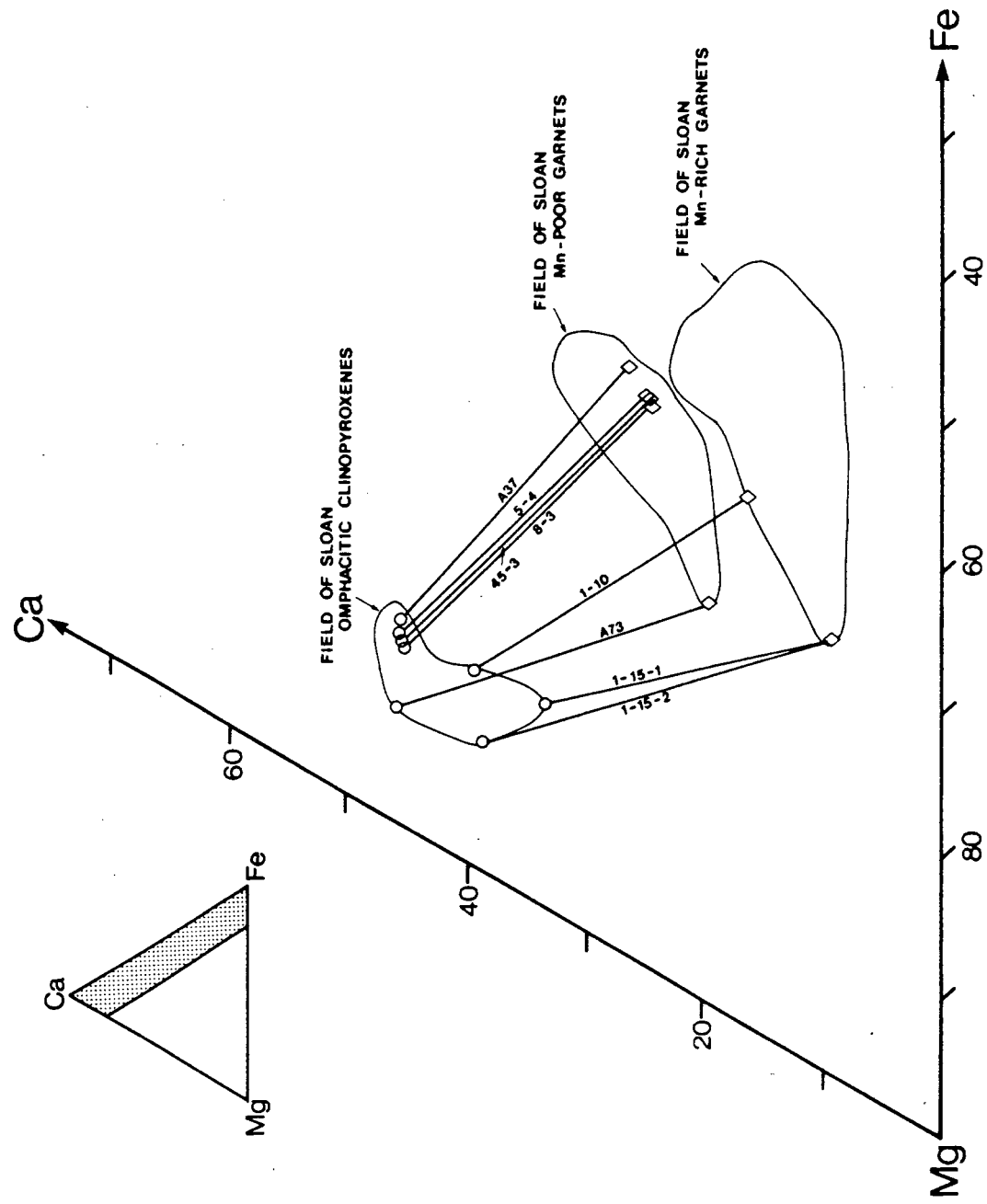


FIGURE 4.32 A portion of the ternary diagram (top left, unstippled area) showing coexisting eclogitic garnet (open diamonds) and clinopyroxene (open circles), connected by tie-lines, from single Sloan diamonds. The fields outline the compositional ranges found for all Sloan inclusions as labelled.

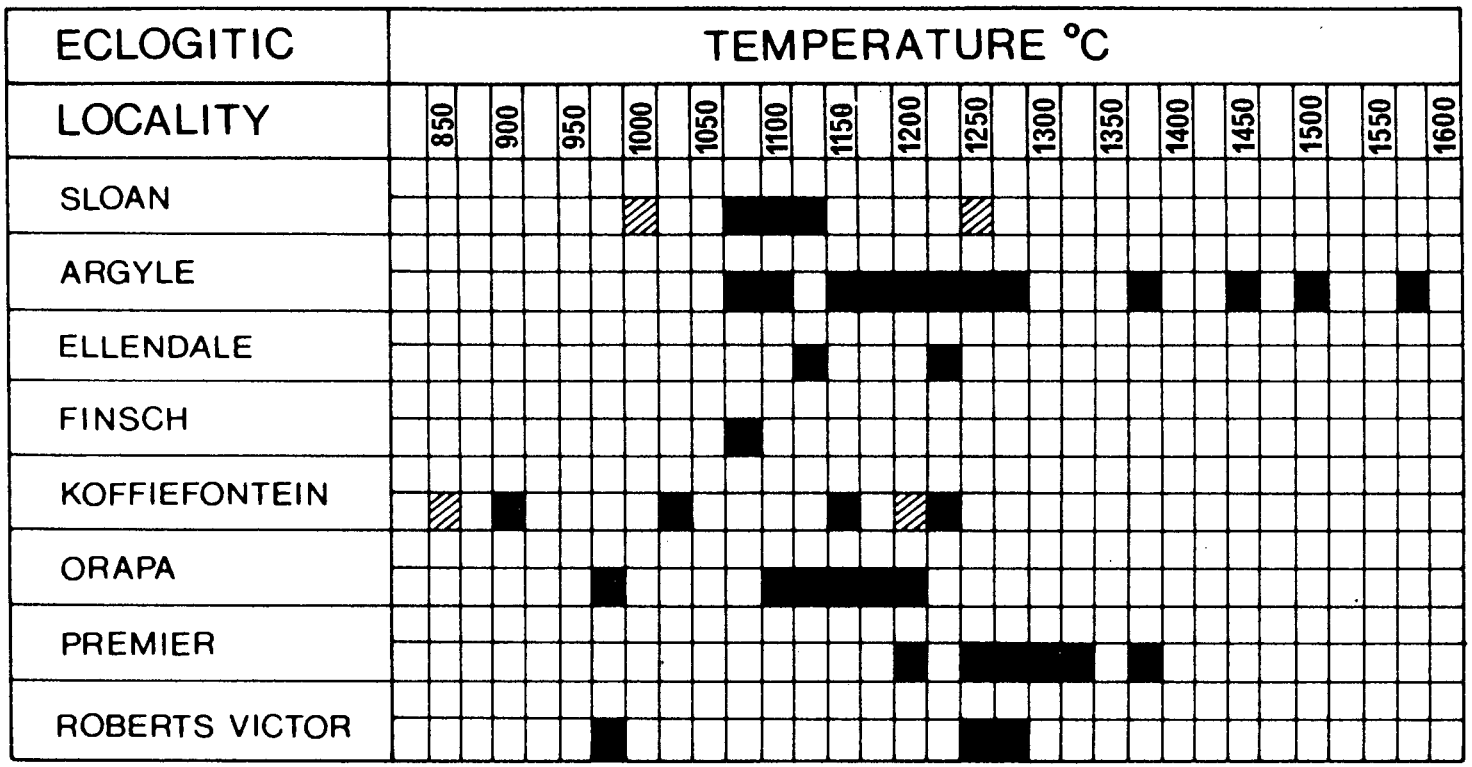


FIGURE 4.33 Temperatures of equilibration for eclogitic garnet and clinopyroxene pairs in Sloan diamonds (this study) relative to those found at other localities, including Argyle and Ellendale (Jaques et al., 1989), Finsch (Gurney et al., 1979), Koffiefontein (Rickard et al., 1989), Orapa (Gurney et al., 1984a), Premier (Gurney et al., 1986) and Roberts Victor (Gurney et al., 1984b). Hatched boxes for Sloan represent the disequilibrium assemblage of two compositionally distinct clinopyroxenes in diamond SL 1-15, whereas the hatched boxes for Koffiefontein represent a disequilibrium assemblage of two compositionally distinct garnets in a single diamond.

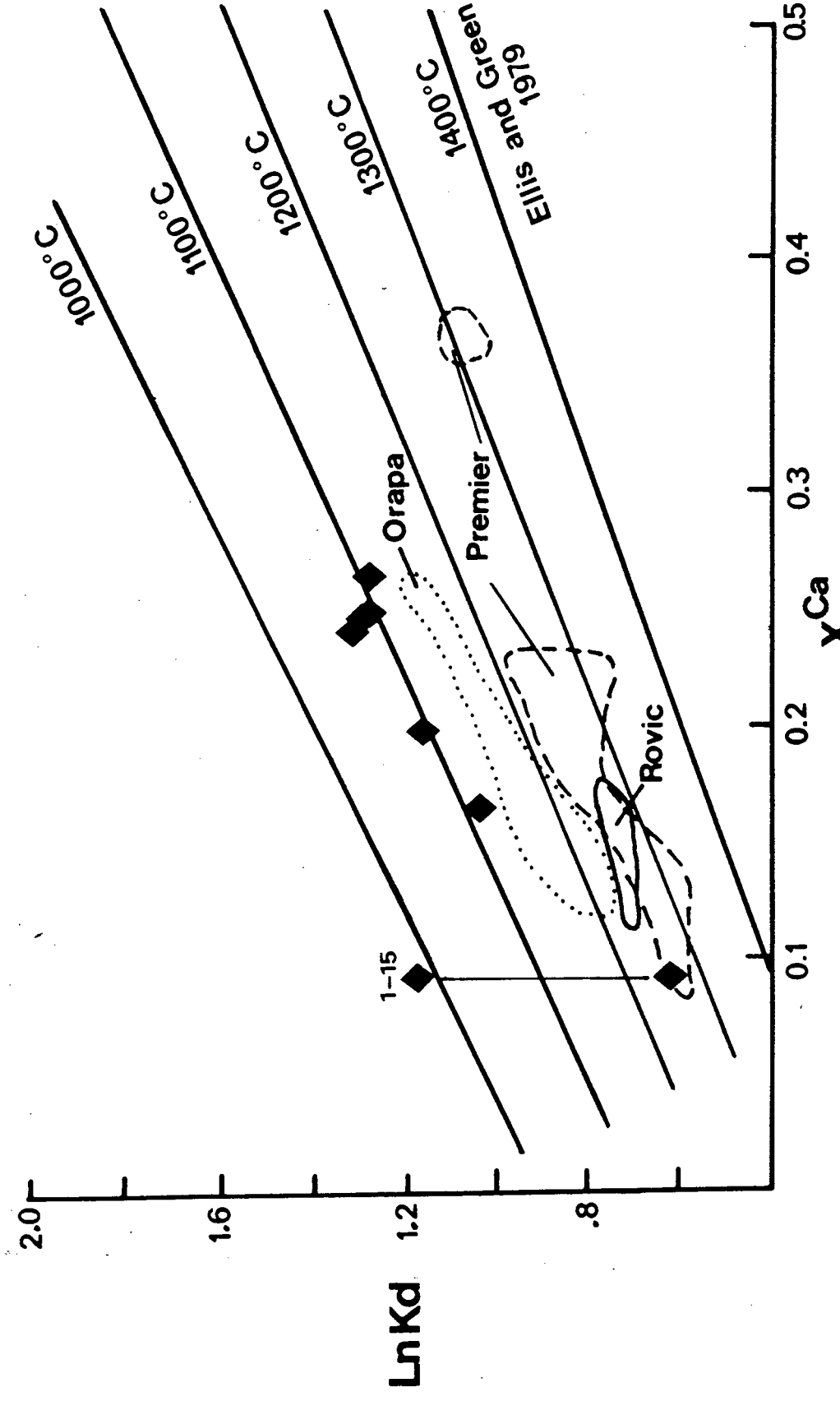


FIGURE 4.34 Variation of Ca in garnet with LnKd for coexisting eclogitic garnet and clinopyroxene pairs in Sloan diamonds (filled diamonds) relative to fields defined by similar assemblages at Orapa (Gurney et al., 1984a), Premier (Gurney et al., 1986) and Roberts Victor (ROVIC) (Gurney et al., 1984b). The labelled isotherms are calculated at 50 kbar using the method of Ellis and Green (1979). $LnKd = (Fe^{2+}/Mg)^{GT}/(Fe^{2+}/Mg)^{CPX}$.

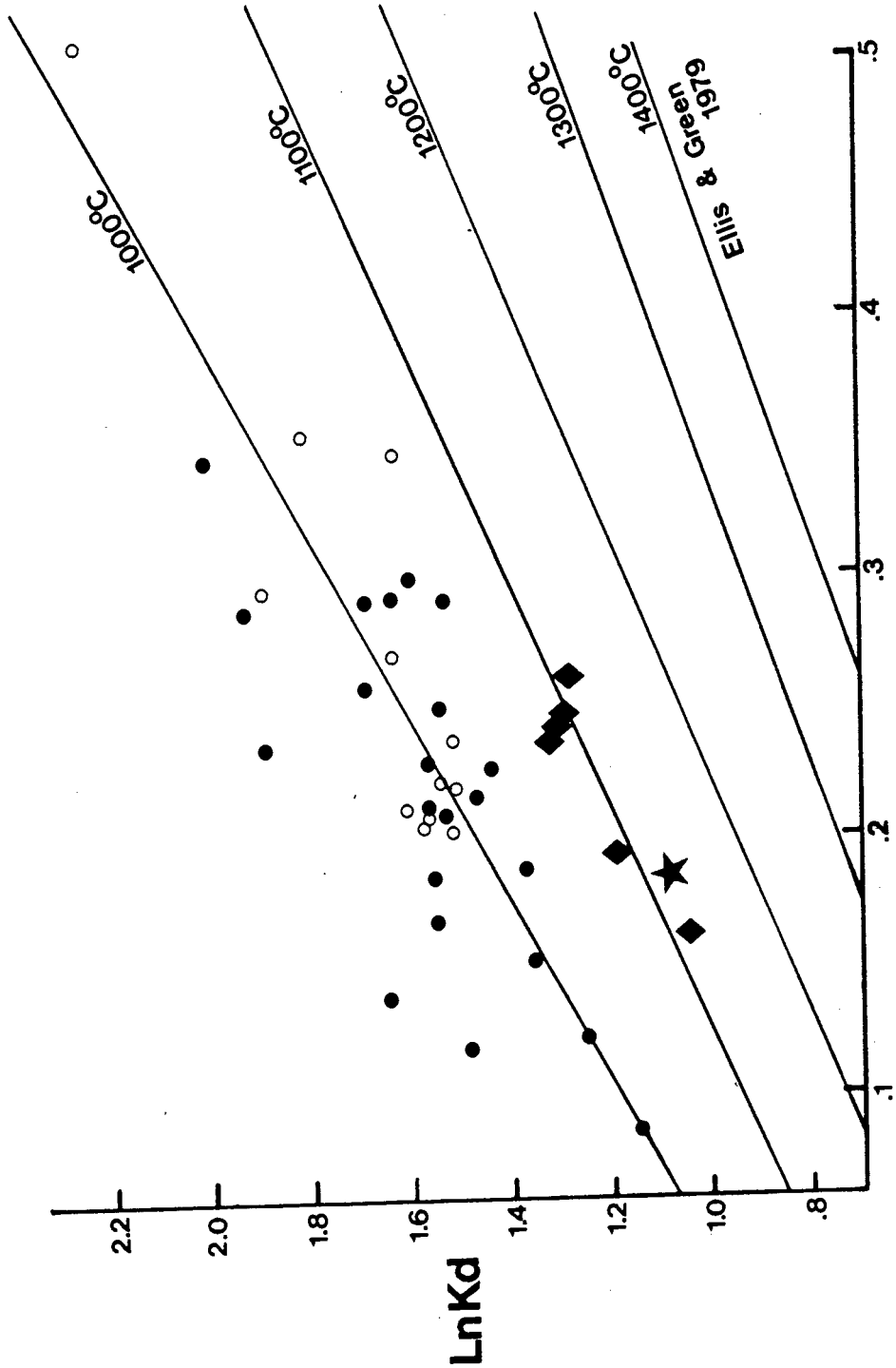


FIGURE 4.35 Variation of Ca in garnet with LnKd for coexisting eclogitic garnet and clinopyroxene pairs in diamonds (filled diamonds), diamond eclogite xenolith TP121 (star) (McCandless and Collins, 1989) and metaluminous and peraluminous eclogite xenoliths (filled and open circles respectively) (Ater, 1982). The labelled isotherms are calculated at 50 kbar using the method of Ellis and Green (1979). $LnKd = (Fe^{2+}/Mg)^{GT}/(Fe^{2+}/Mg)^{CPX}$.

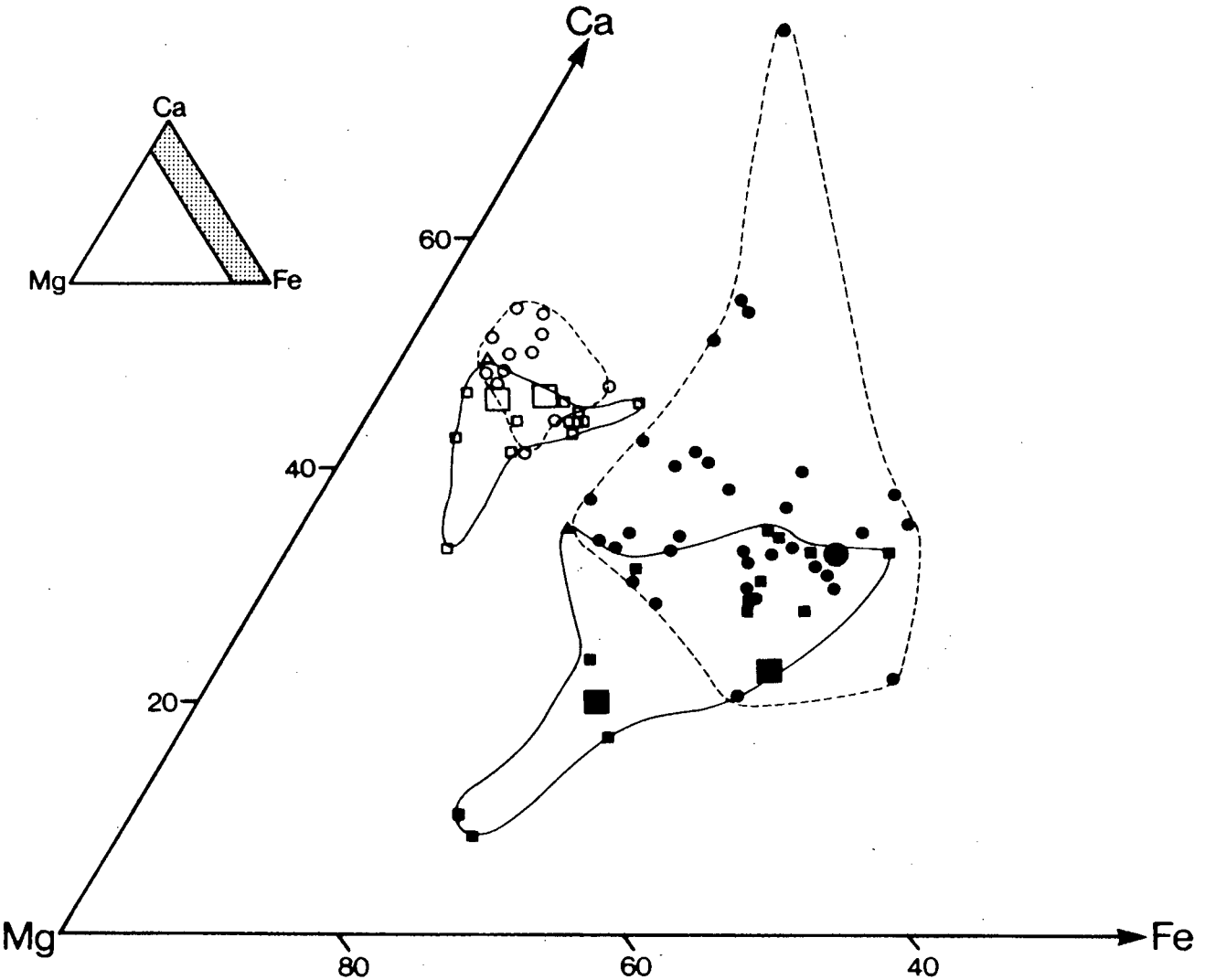


FIGURE 4.36 Portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the compositional variation of eclogitic garnets (filled symbols) and clinopyroxenes (open symbols) occurring as inclusions in diamond and diamondiferous eclogite xenoliths from Sloan (large symbols) and other worldwide sources (small symbols). Those minerals found coexisting only with rutile are represented by squares and surrounded by solid fields, whereas those found coexisting with coesite, feldspar, kyanite or corundum (but not rutile) are represented by circles and surrounded by dashed fields.

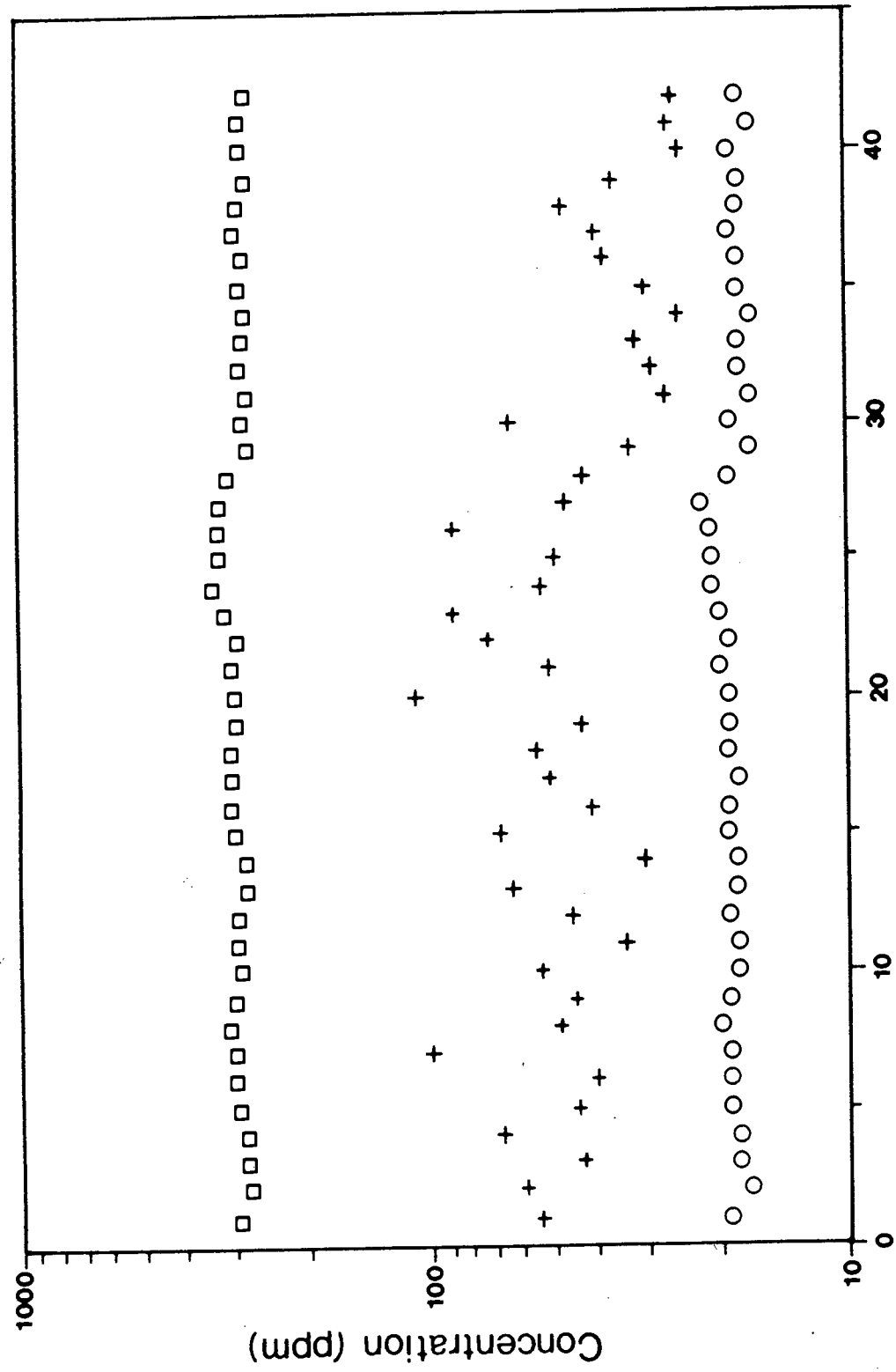


FIGURE 4.37 Variation in the concentration of U (open squares), total Pb (+) and Th (open circles) for repeated scans across the zircon inclusion recovered from Sloan diamond SL A61 (I. Williams, pers. comm., 1989).

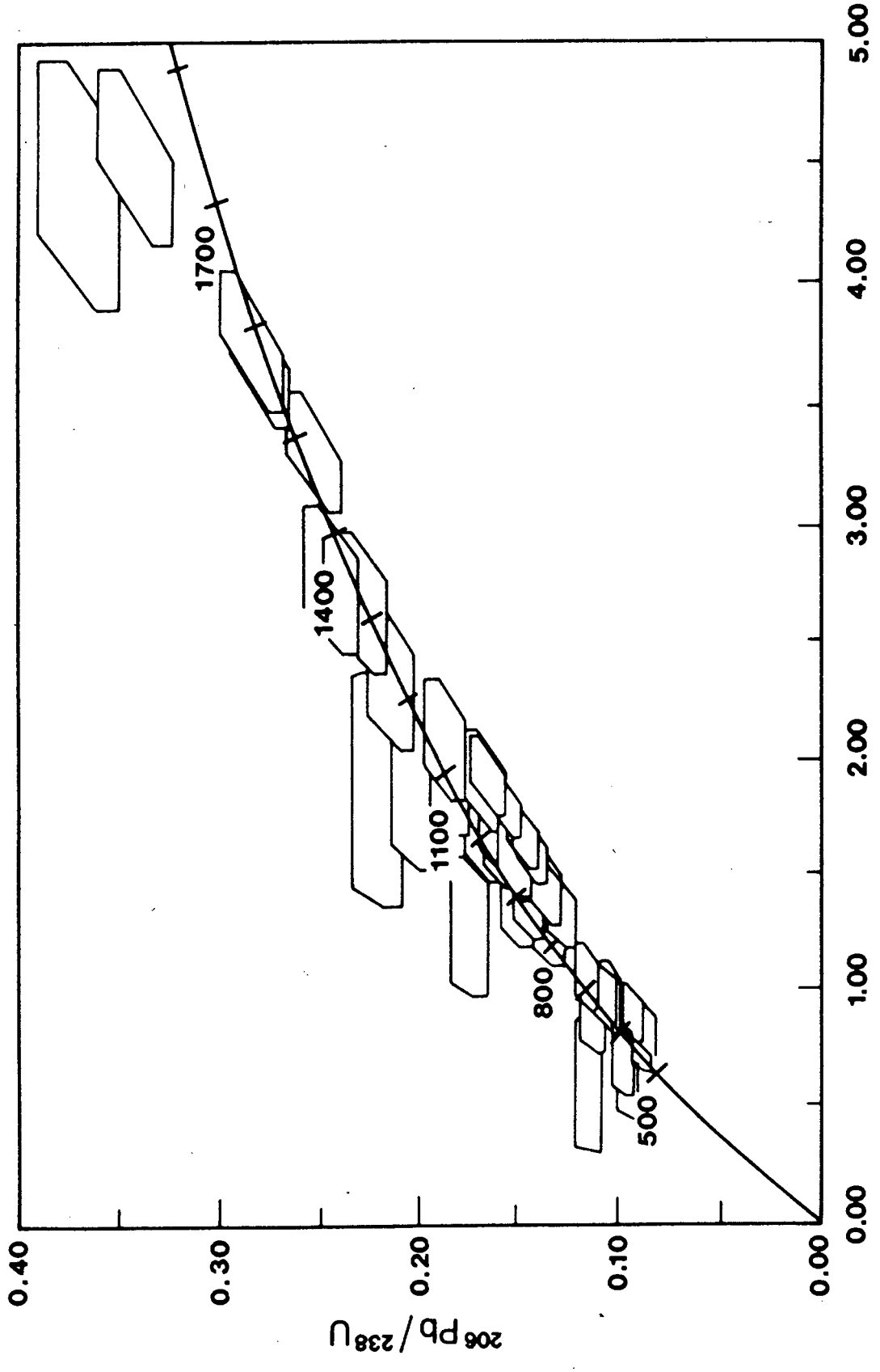


FIGURE 4.38 A Concordia diagram on which data points derived from estimates of the $^{207}Pb/^{206}Pb$ for each of 42 individual scans across the zircon inclusion recovered from Sloan diamond SL A61

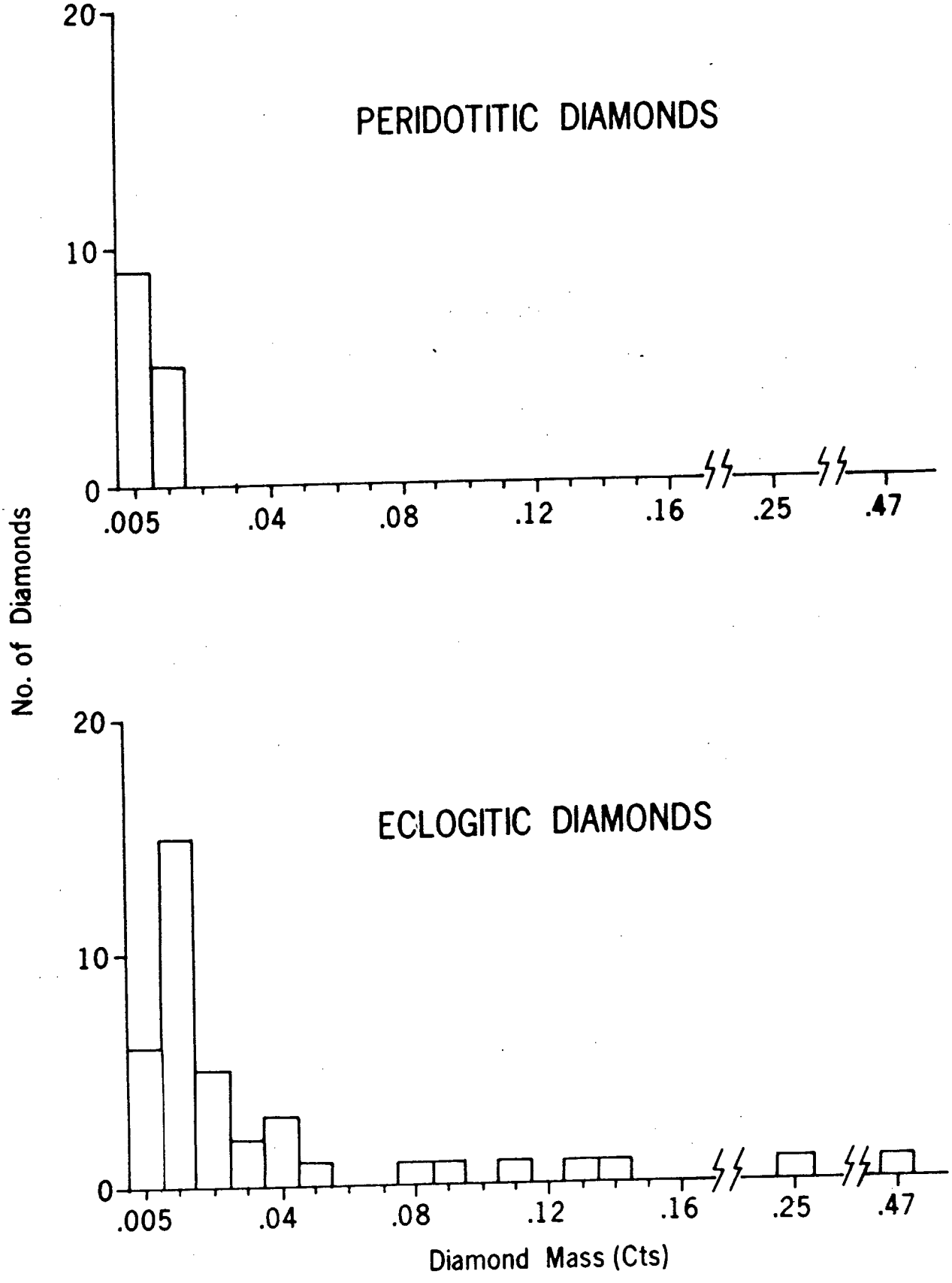


FIGURE 4.39 Histograms showing the primary mass distribution for the peridotitic and eclogitic diamond subsamples from Sloan.

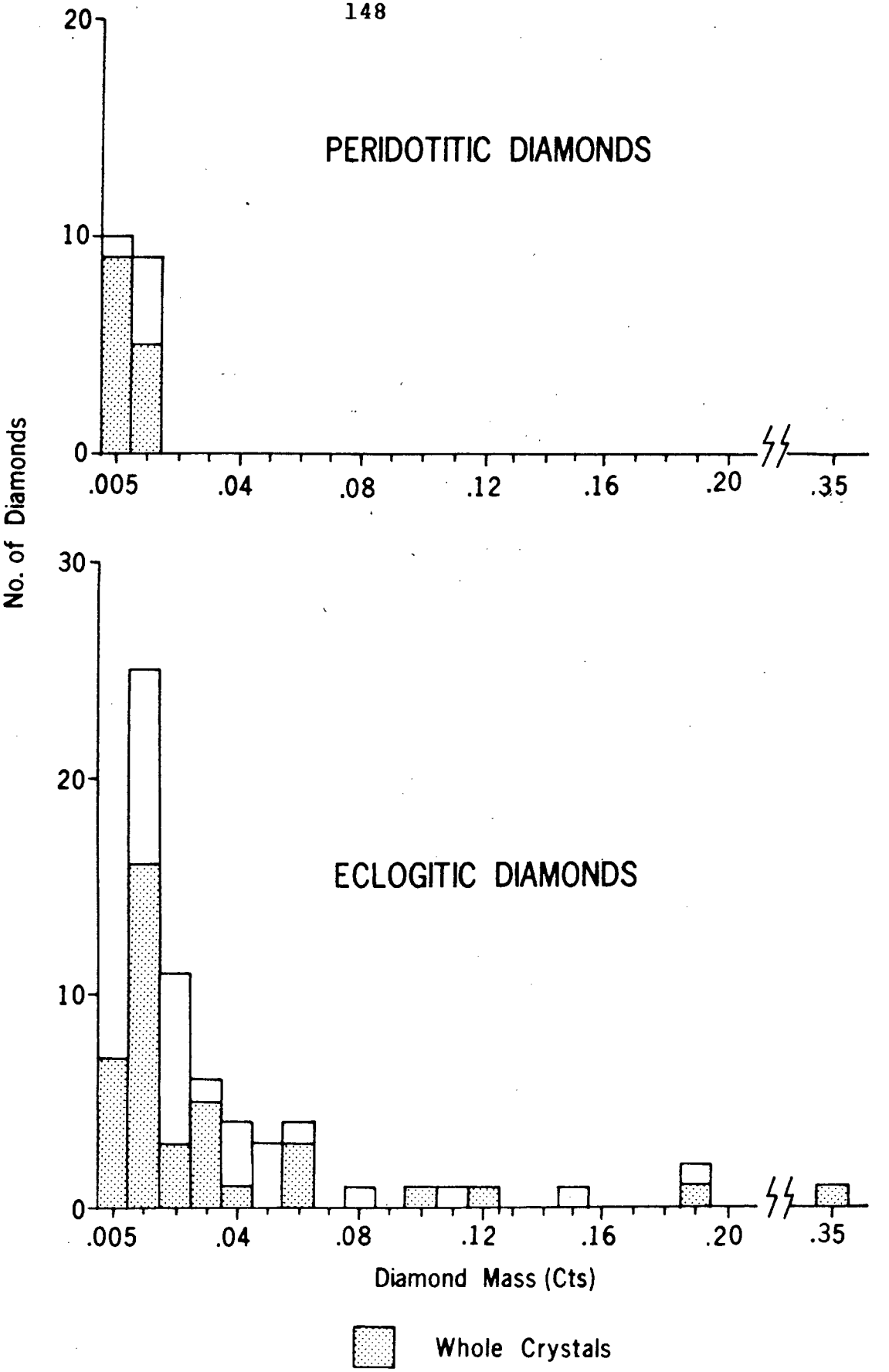


FIGURE 4.40 Histograms showing the secondary mass distribution for peridotitic and eclogitic subsamples from Sloan. The whole crystal subsamples, for which primary mass (see previous Figure) was calculated, are shown.

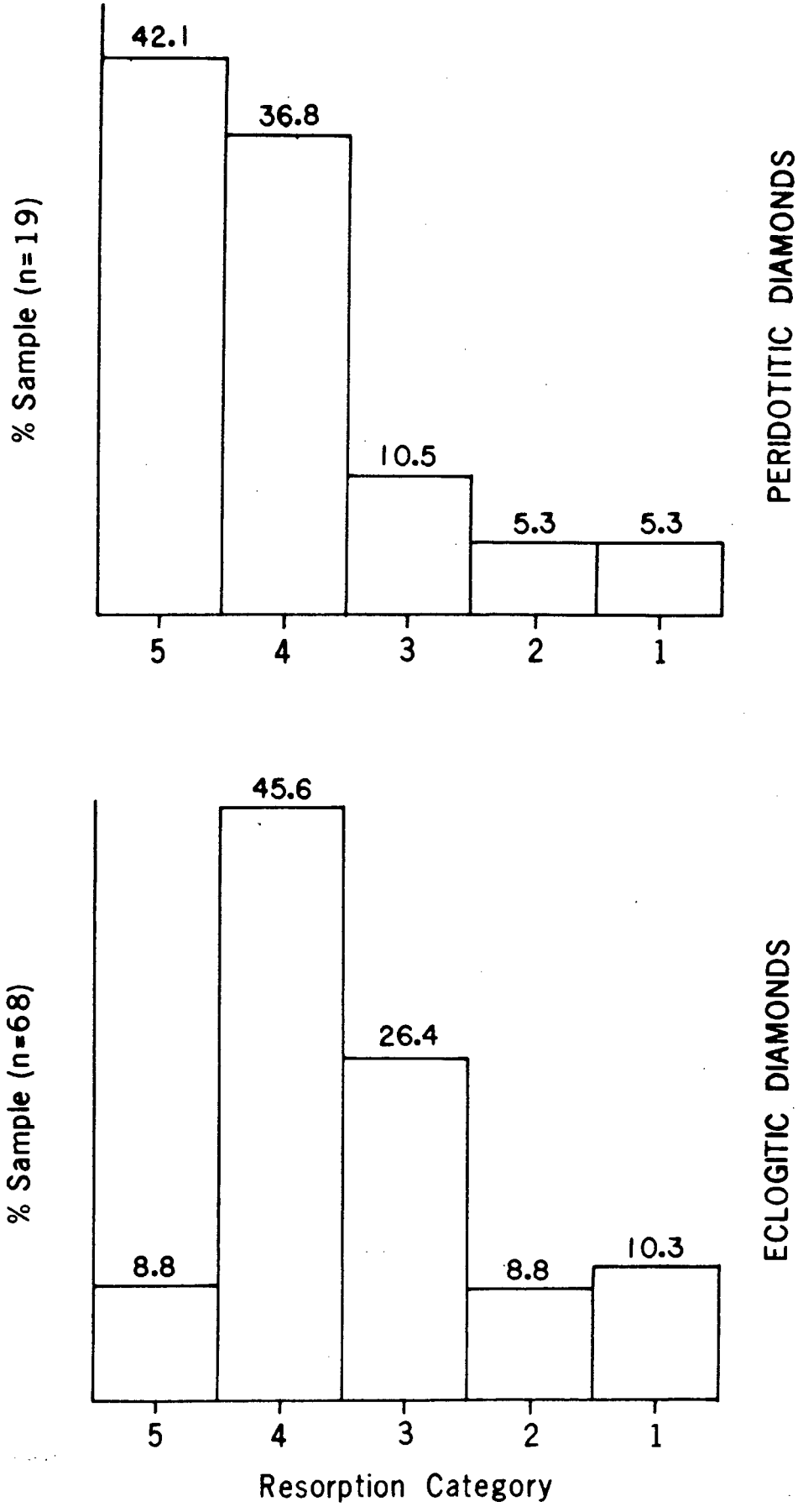


FIGURE 4.41 Percentage of peridotitic and eclogitic diamonds in each resorption morphology category (see Figure 3.12).

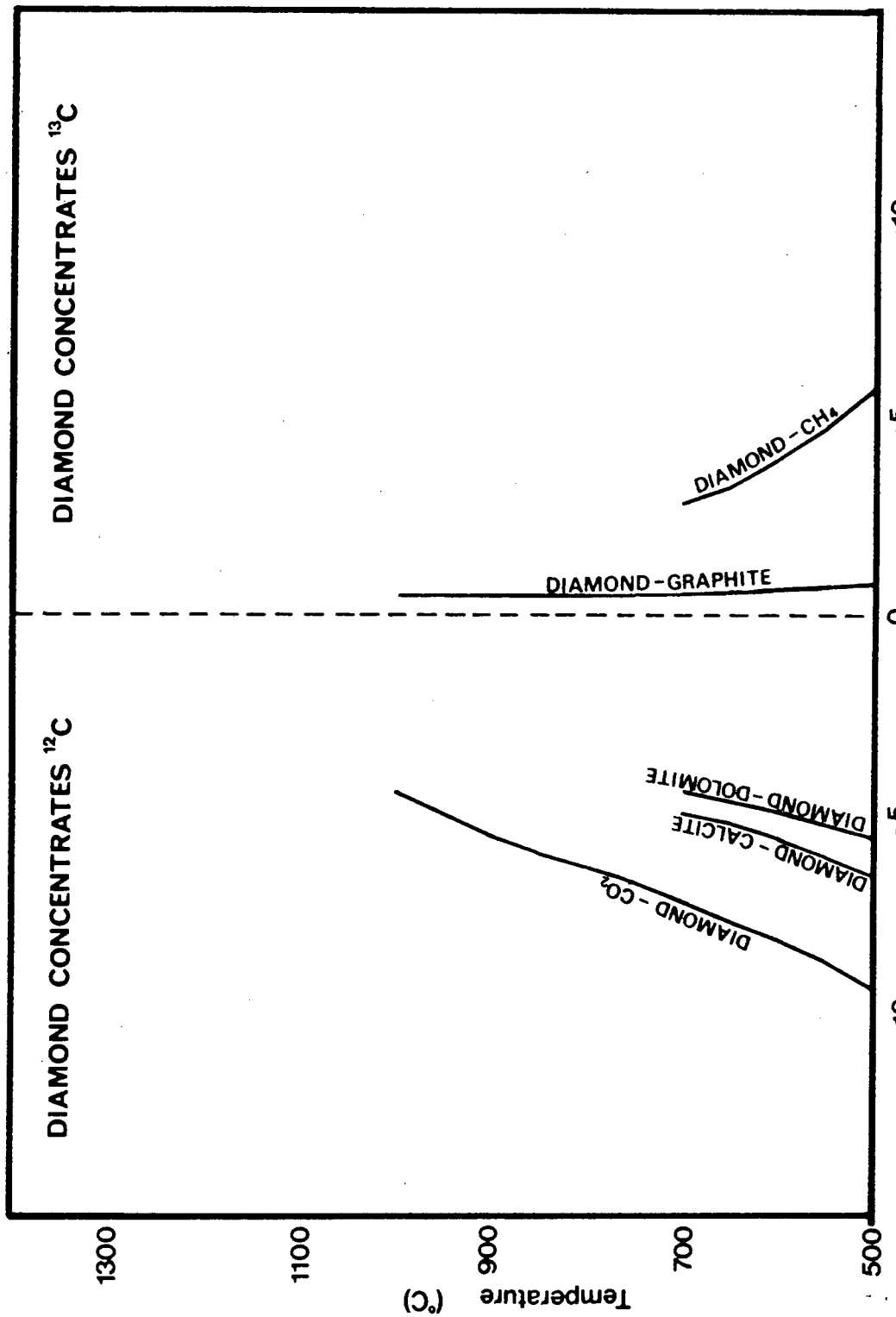


FIGURE 5.1 Fractionation curves from which fractionation factors ($1000 \ln \alpha$) between diamonds and other carbon-bearing species calculated or determined at various temperatures can be read. Data from Bottinga (1969a,b) and Sheppard and Schwarcz (1970), as summarized by Friedman and O'Neil (1977).

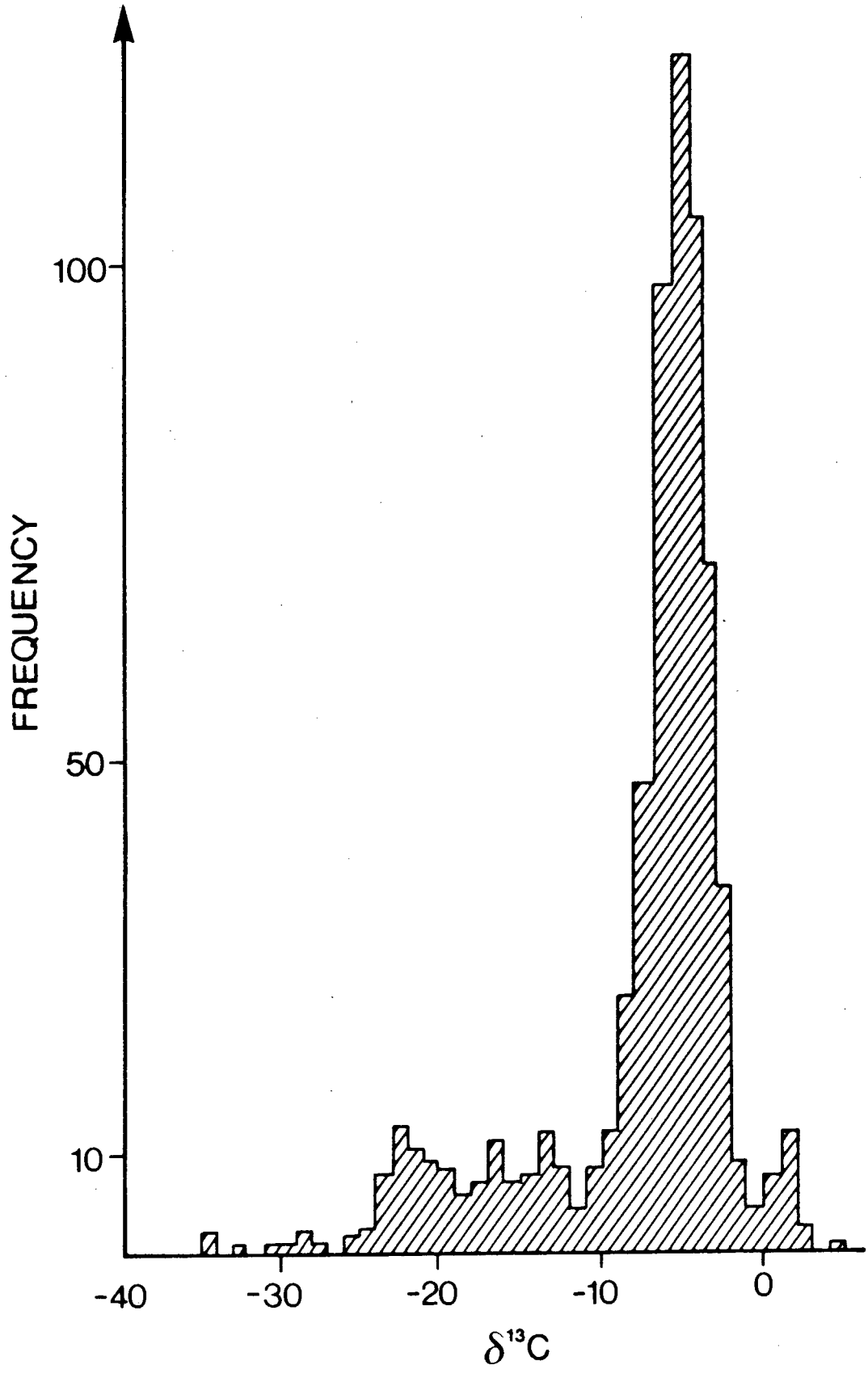


FIGURE 5.2 Distribution of $\delta^{13}C$ values determined for diamonds from worldwide sources (after Harris, 1987).

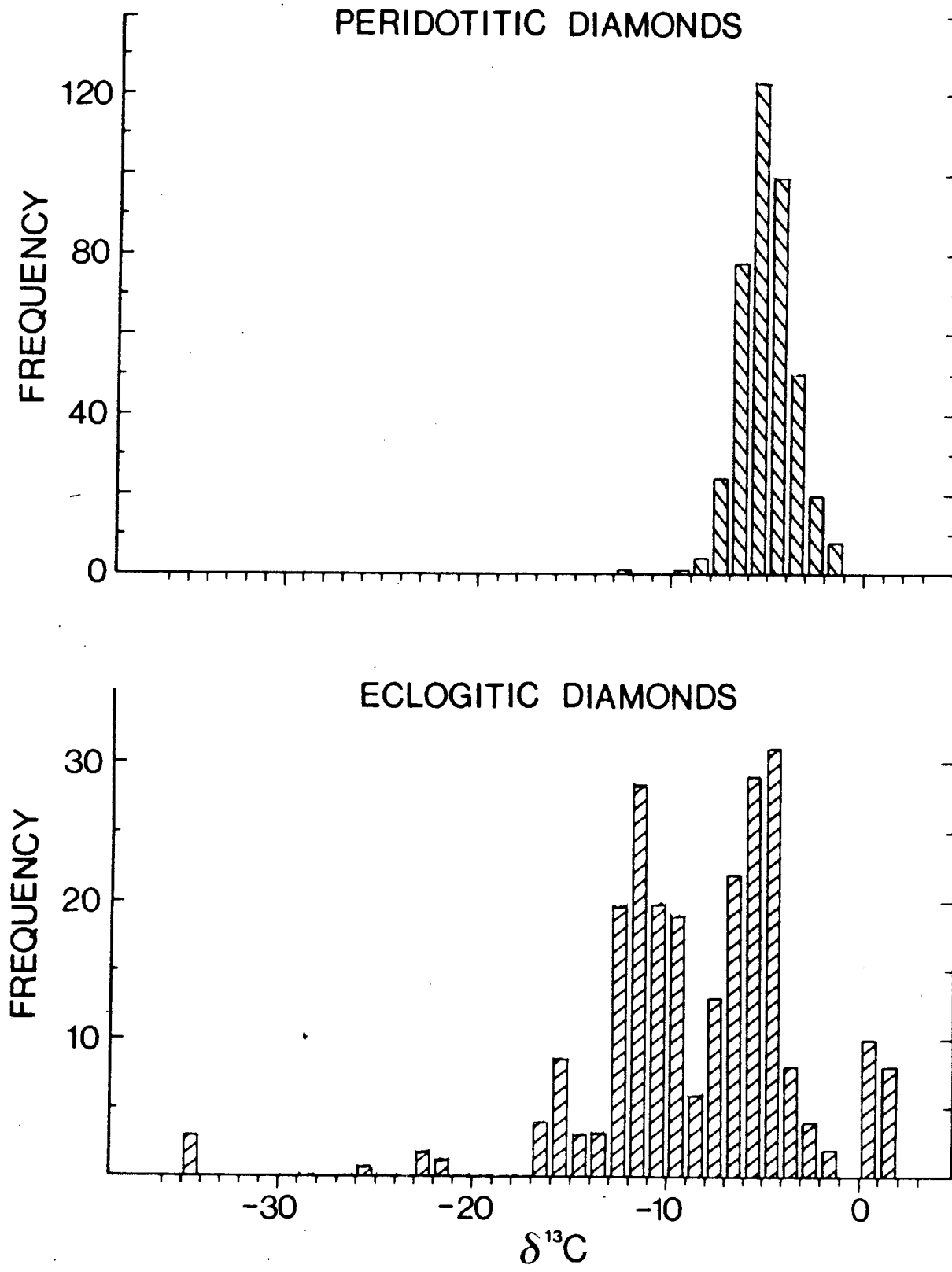


FIGURE 5.3 Distribution of $\delta^{13}C$ values for diamonds of peridotitic and eclogitic paragenesis from worldwide sources. Data from Galimov (1984), Deines et al. (1984,1987), Sobolev (1984a) and Jaques et al. (1989).

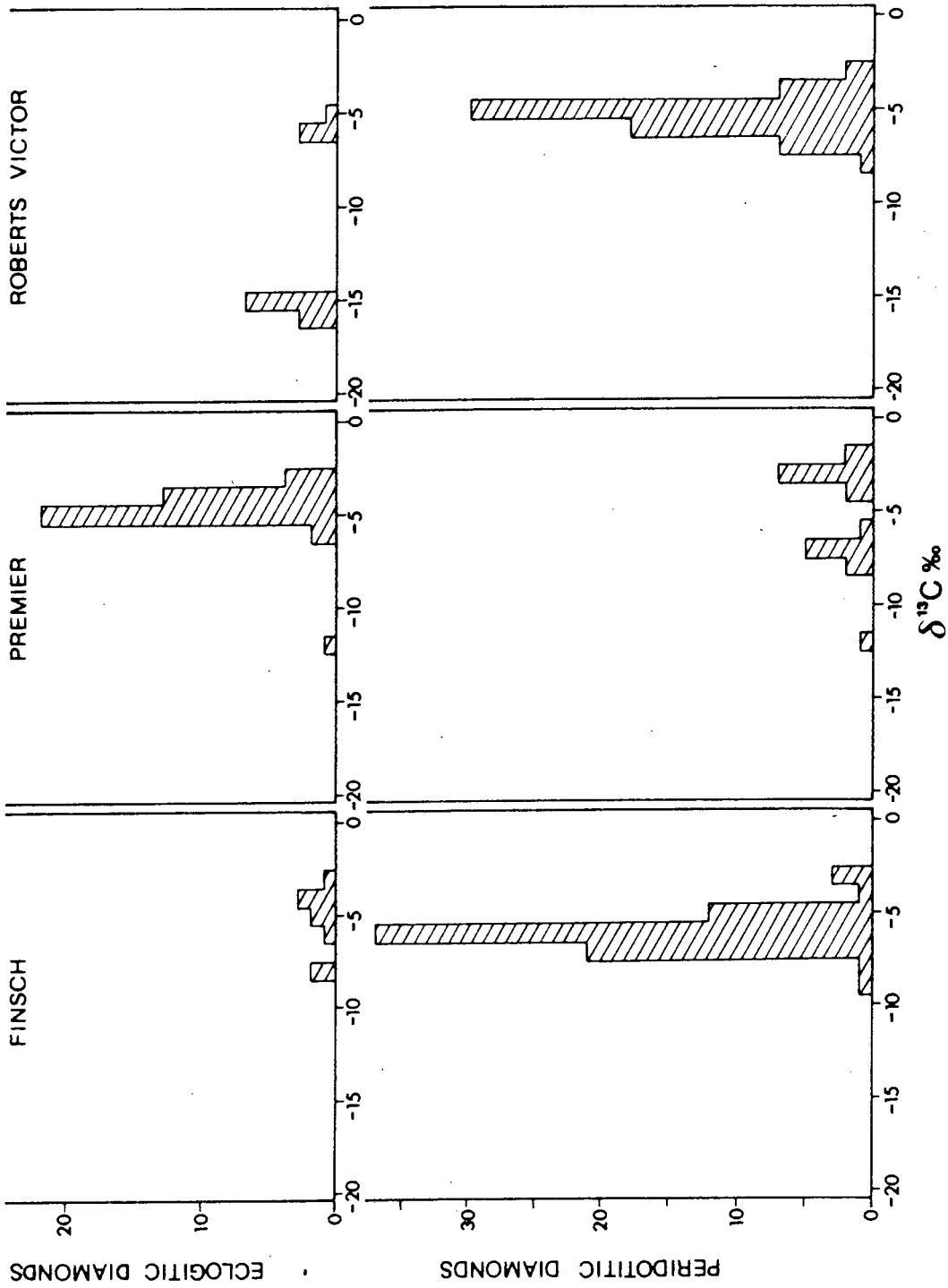


FIGURE 5.4 Distribution of $\delta^{13}C$ values for diamonds of peridotitic and eclogitic affinity from the Finsch, Premier and Roberts Victor localities in southern Africa. Data from Deines et al. (1984, 1987).

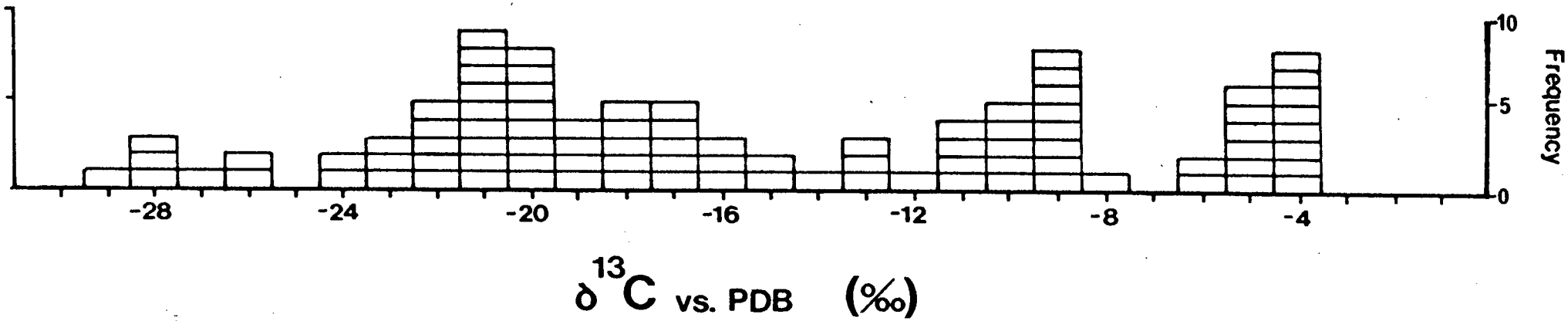


FIGURE 5.5 A histogram of $\delta^{13}C$ values (plotted at $1^{o}/_{oo}$ intervals) for the Sloan diamonds. In most cases, each block represents the average for two or more fragments from a single diamond.

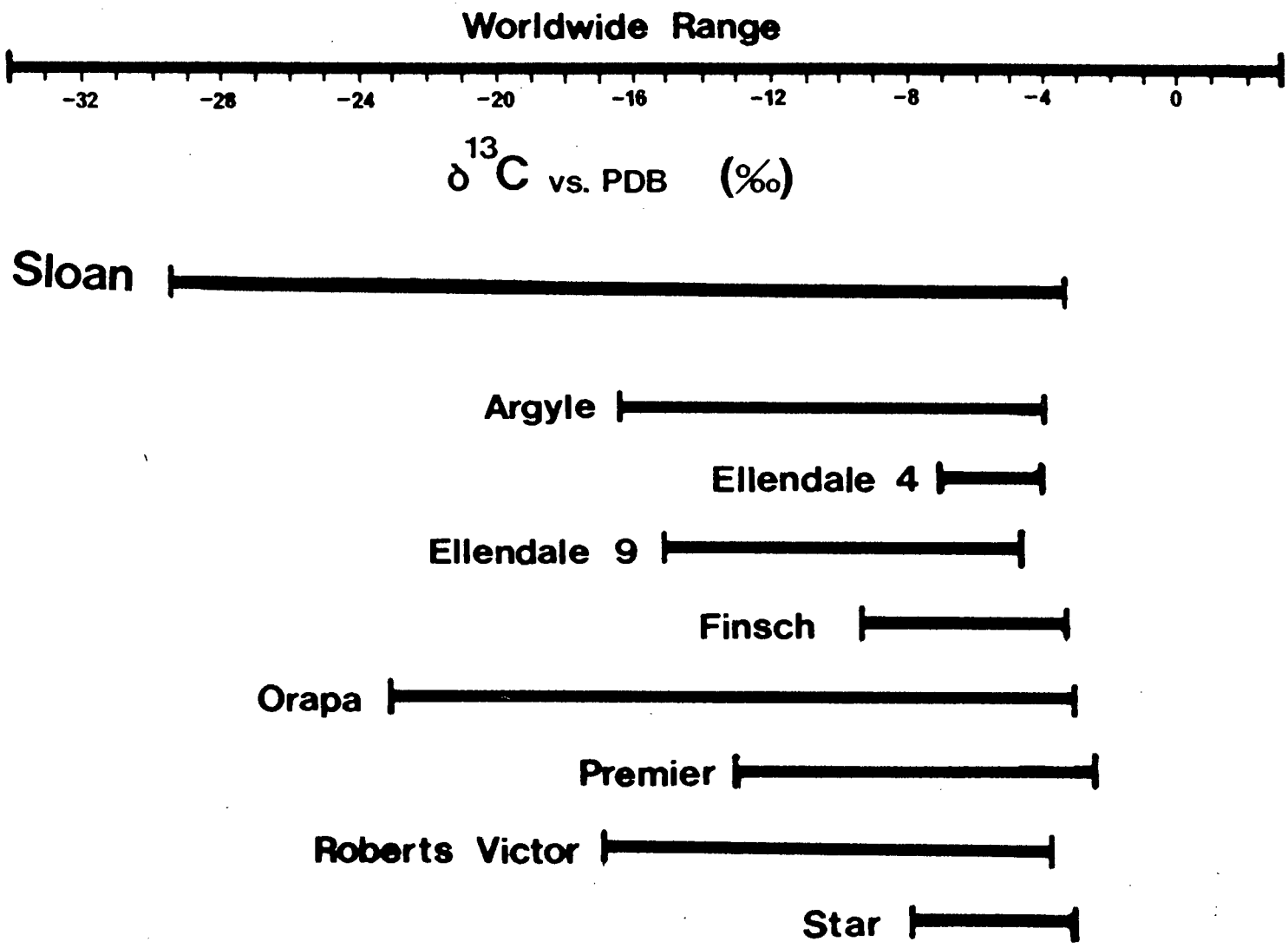


FIGURE 5.6 The range of $\delta^{13}C$ values for diamonds from individual well-documented localities compared to that of diamonds analyzed worldwide. Data from Sloan (this study), Argyle and Ellendale (Jaques et al., 1989), Finsch and Premier (Deines et al., 1984), Orapa (Deines et al., 1986; McCandless et al., 1989), Roberts Victor (Deines et al., 1987) and Star (Hill, 1989).

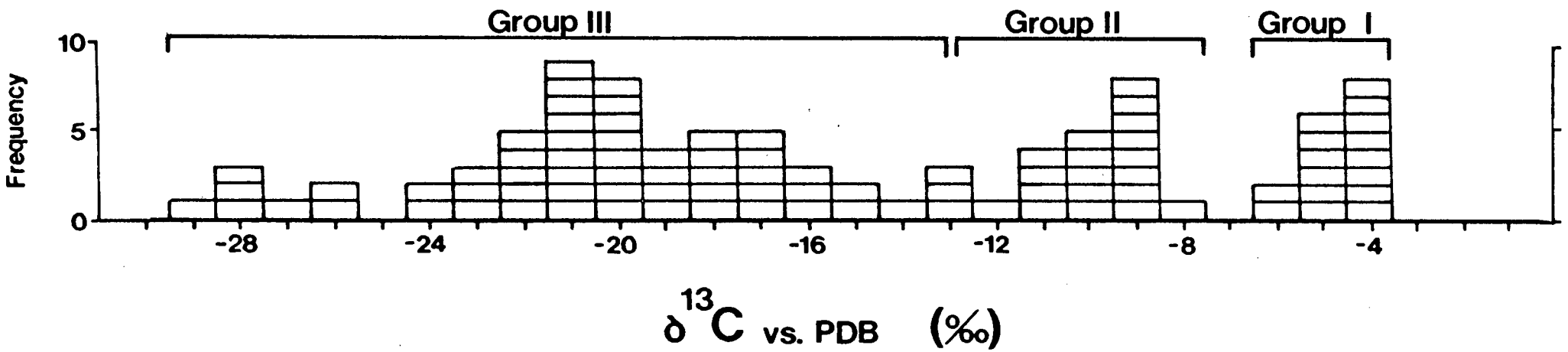


FIGURE 5.7 Three groups of Sloan diamonds are defined based on the major modes of average $\delta^{13}C$ values. Groups II and III are arbitrarily divided at -13 $^{o}/_{oo}$.

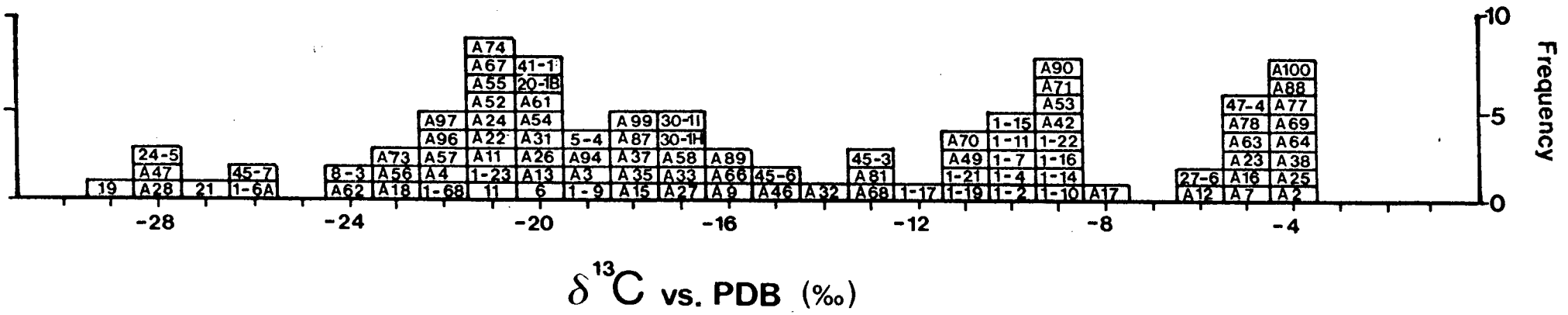


FIGURE 5.8 Distribution of $\delta^{13}C$ values for Sloan diamonds as shown in Figure 5.5. In this figure each block is keyed to a specific diamond (see Appendix VII) for reference in subsequent figures.

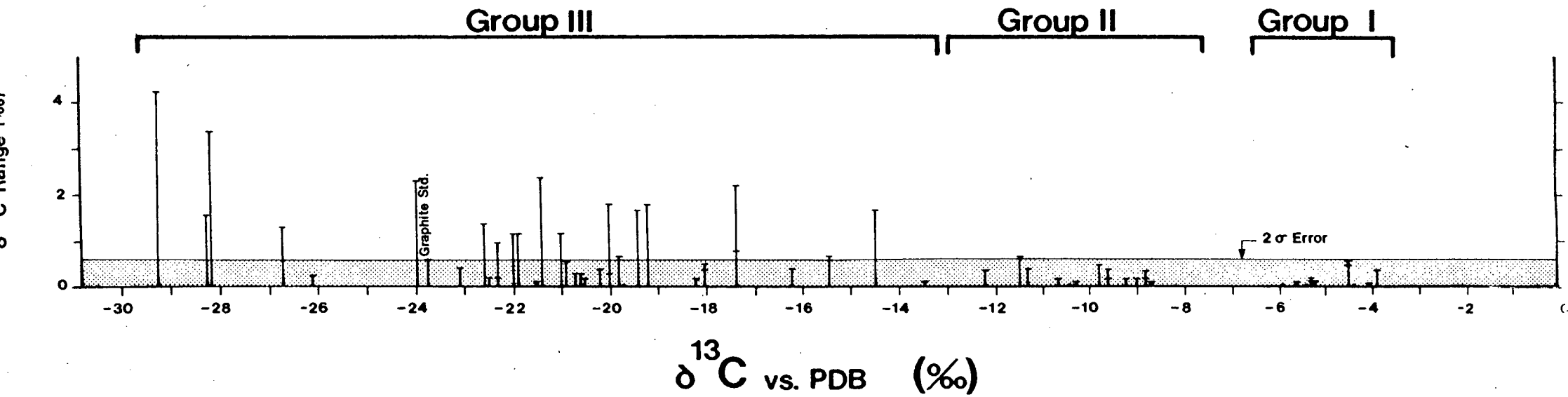


FIGURE 5.9 The within diamond range of $\delta^{13}C$ values, as determined on two or more fragments from individual diamonds, is plotted as a vertical bar at the average $\delta^{13}C$ value of the sample on the horizontal axis. The 2σ error which is based on replicate analyses of the graphite standard is highlighted.

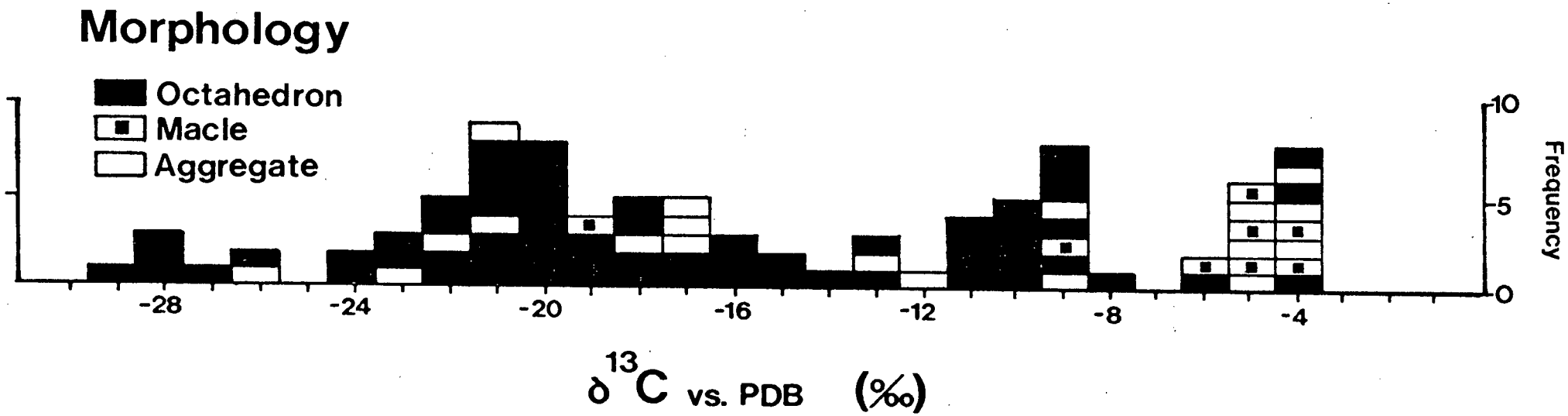


FIGURE 5.10 The primary morphology of individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition.

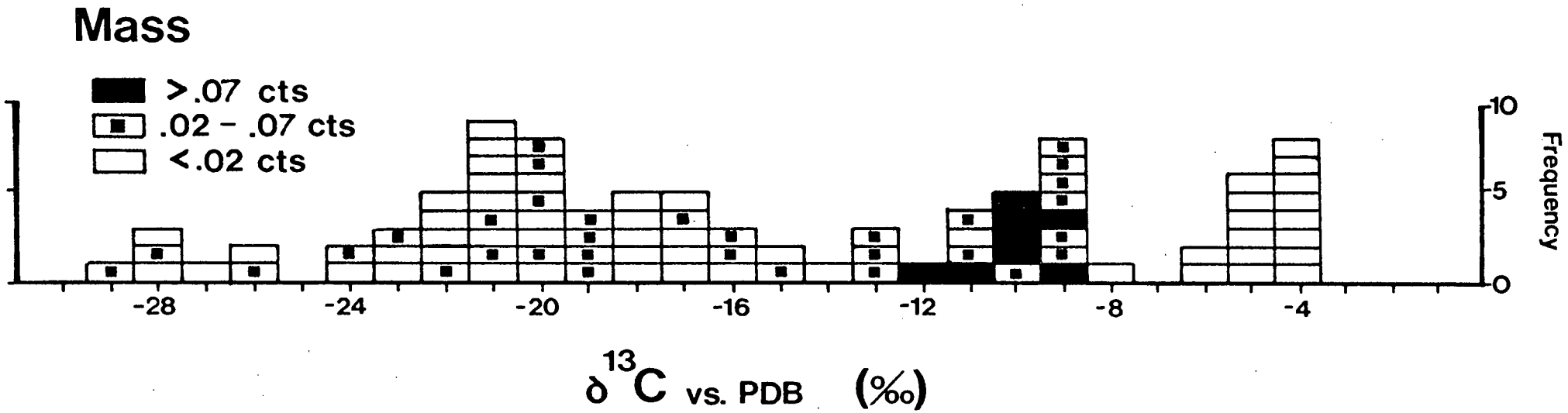


FIGURE 5.11 The secondary mass of individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition.

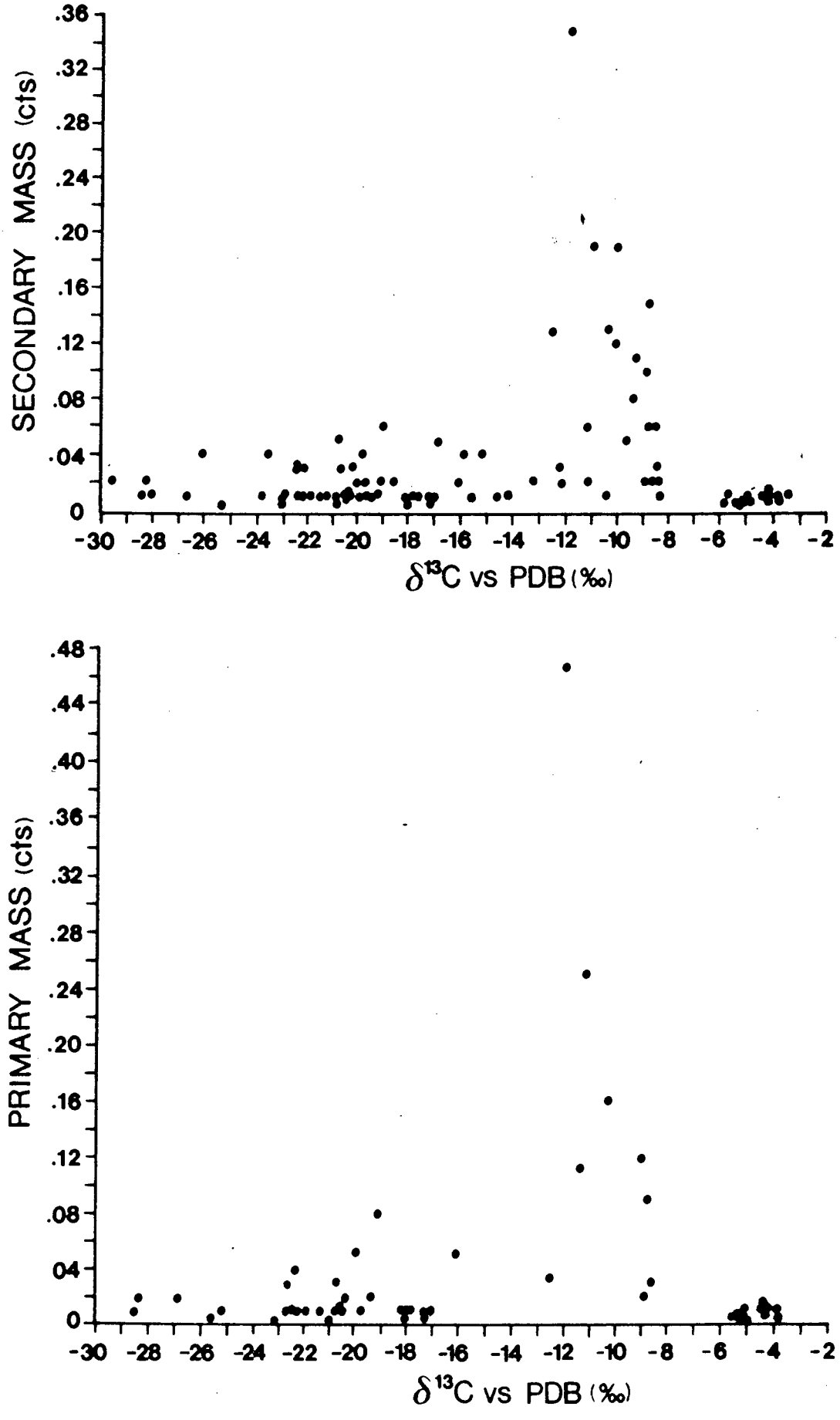


FIGURE 5.12 Variation in Sloan diamond carbon isotope composition ($\delta^{13}C$) with secondary mass (a) and primary mass (b).

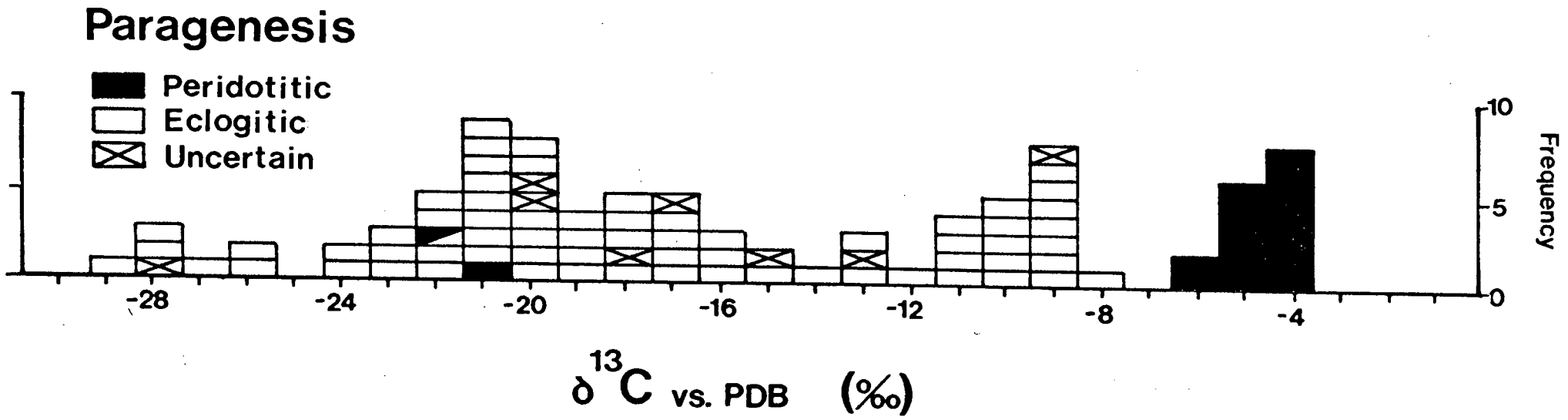


FIGURE 5.13 The paragenesis of individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition.

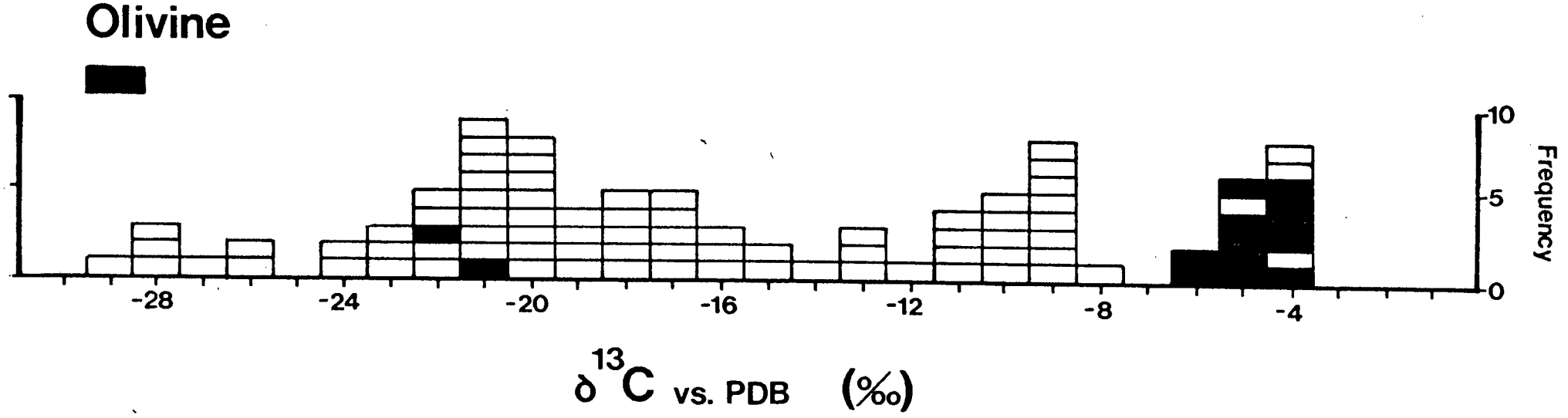


FIGURE 5.14 The occurrence of olivine inclusions in individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition.

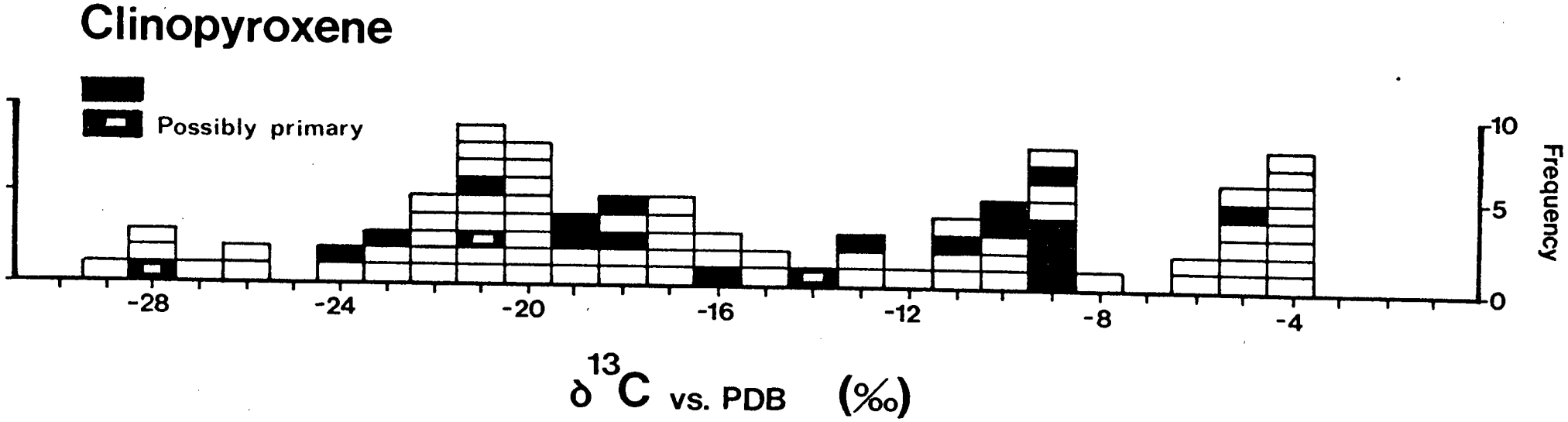


FIGURE 5.15 The occurrence of clinopyroxene inclusions in individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition. The three possibly primary clinopyroxenes are discussed in Section 4.6.2.

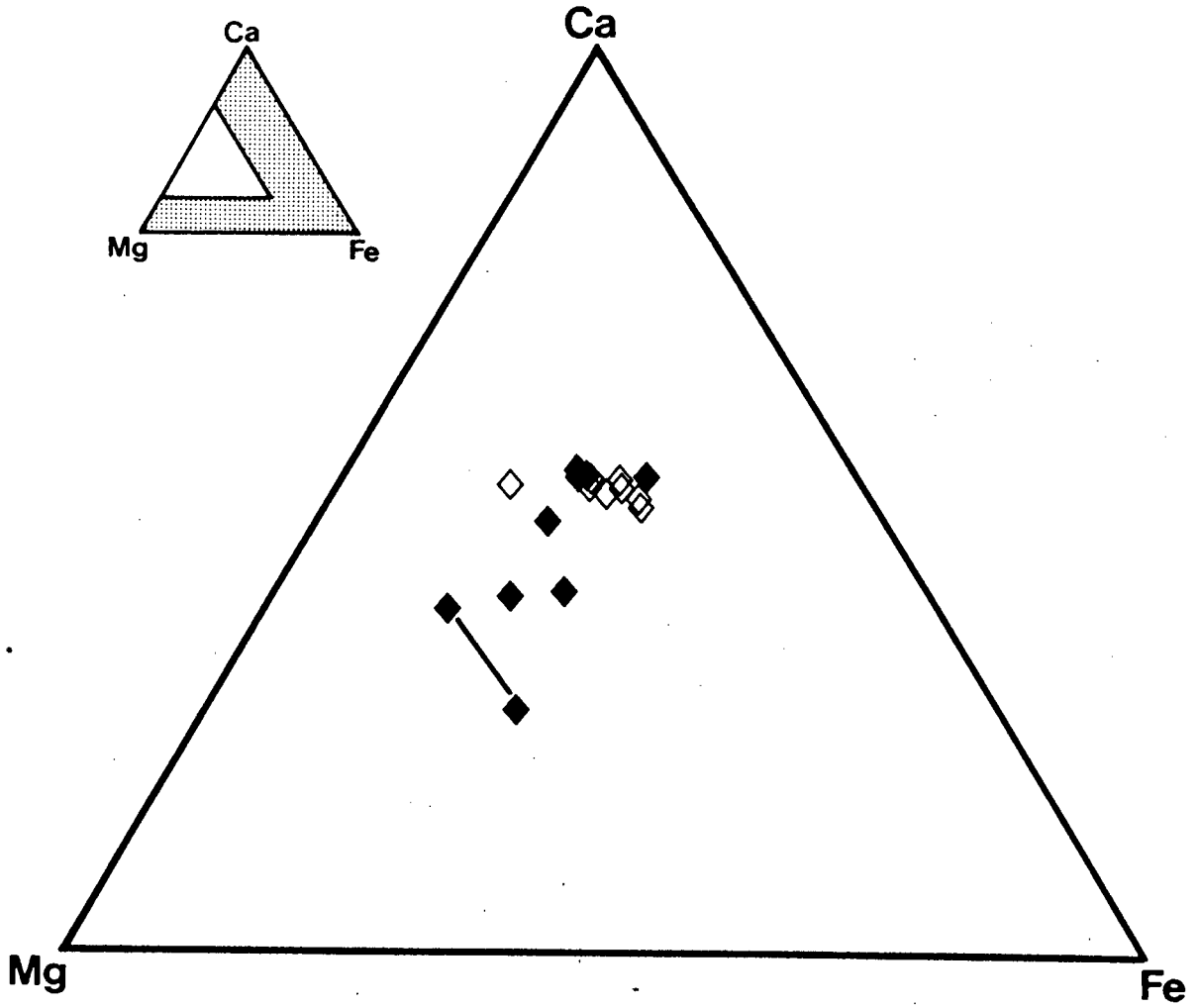


FIGURE 5.16 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing the composition of clinopyroxene inclusions from Sloan diamonds. The clinopyroxenes represented by filled symbols occur in Group II diamonds (as defined by carbon isotope composition), whereas those represented by open symbols occur in Group III diamonds.

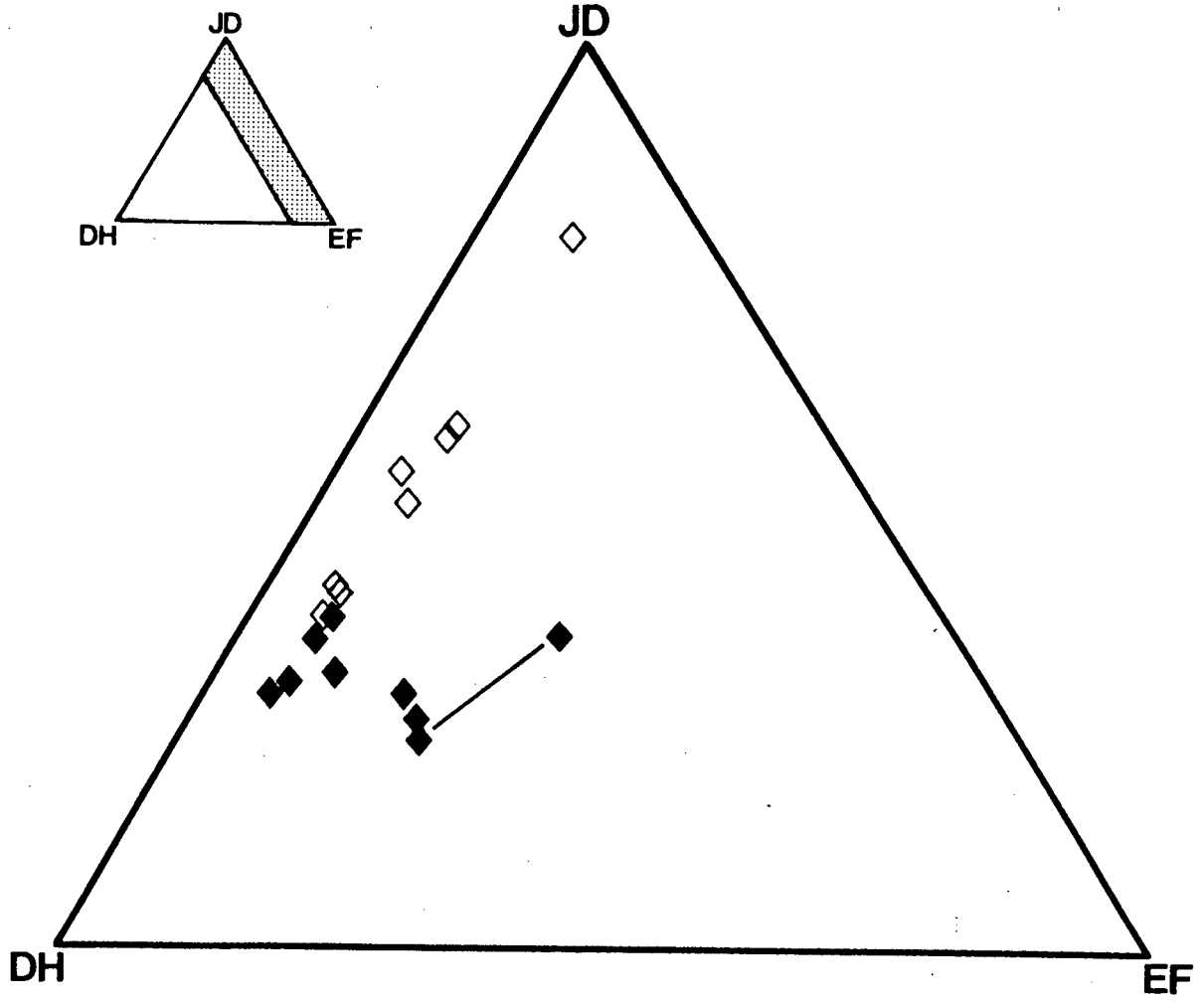


FIGURE 5.17 Portion of the Jadeite (JD) - Diopside/Hedenbergite (HD) - Enstatite/Ferrosilite (EF) ternary diagram (top left, unstippled area) showing the composition of clinopyroxene inclusions from Sloan diamonds. The clinopyroxenes represented by filled symbols occur in Group II diamonds (as defined by carbon isotope composition), whereas those represented by open symbols occur in Group III diamonds.

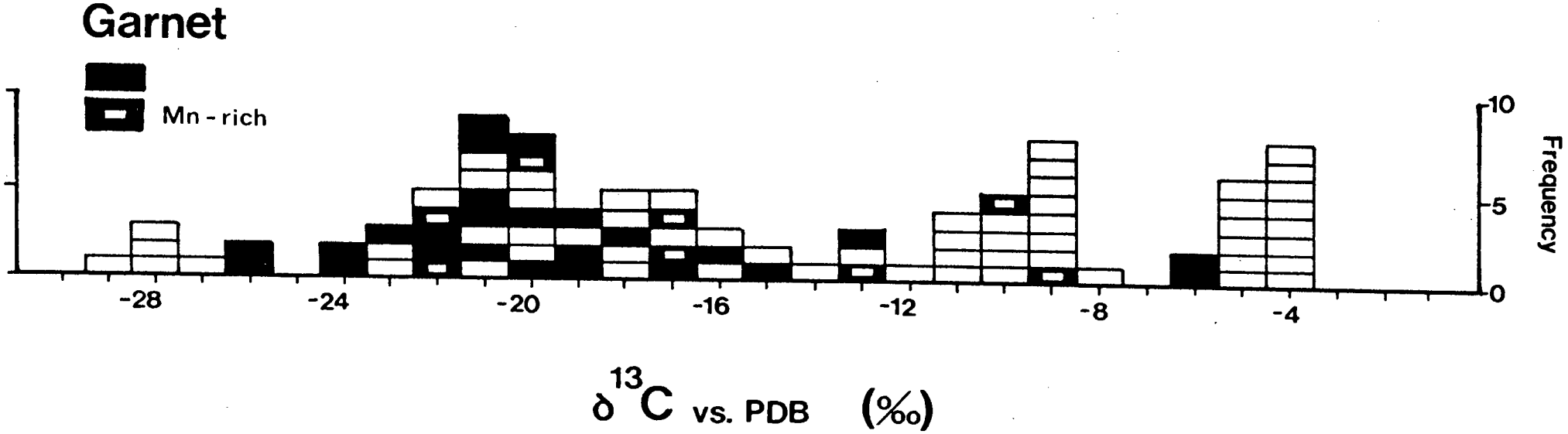


FIGURE 5.18 The occurrence of garnet inclusions in individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition. Mn-rich garnets are those defined in Section 4.5.1.

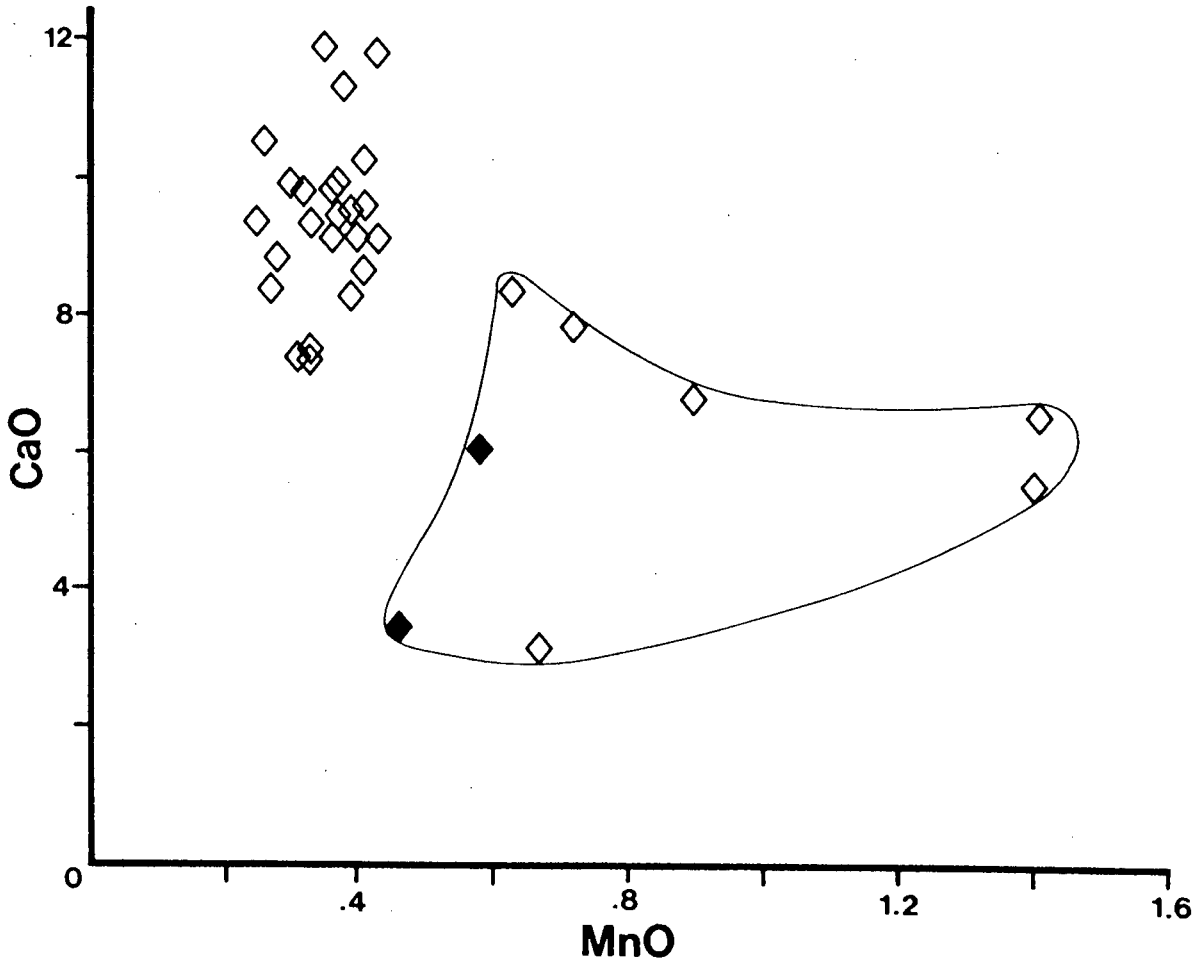


FIGURE 5.19 Variation in MnO with CaO for eclogitic garnets in Sloan diamonds. The field demarcates the Mn-rich garnets as defined in Chapter 4. The two garnets represented by filled symbols occur in Group II diamonds (as defined based on carbon isotope composition), whereas all other garnets (open symbols) occur in Group III diamonds.

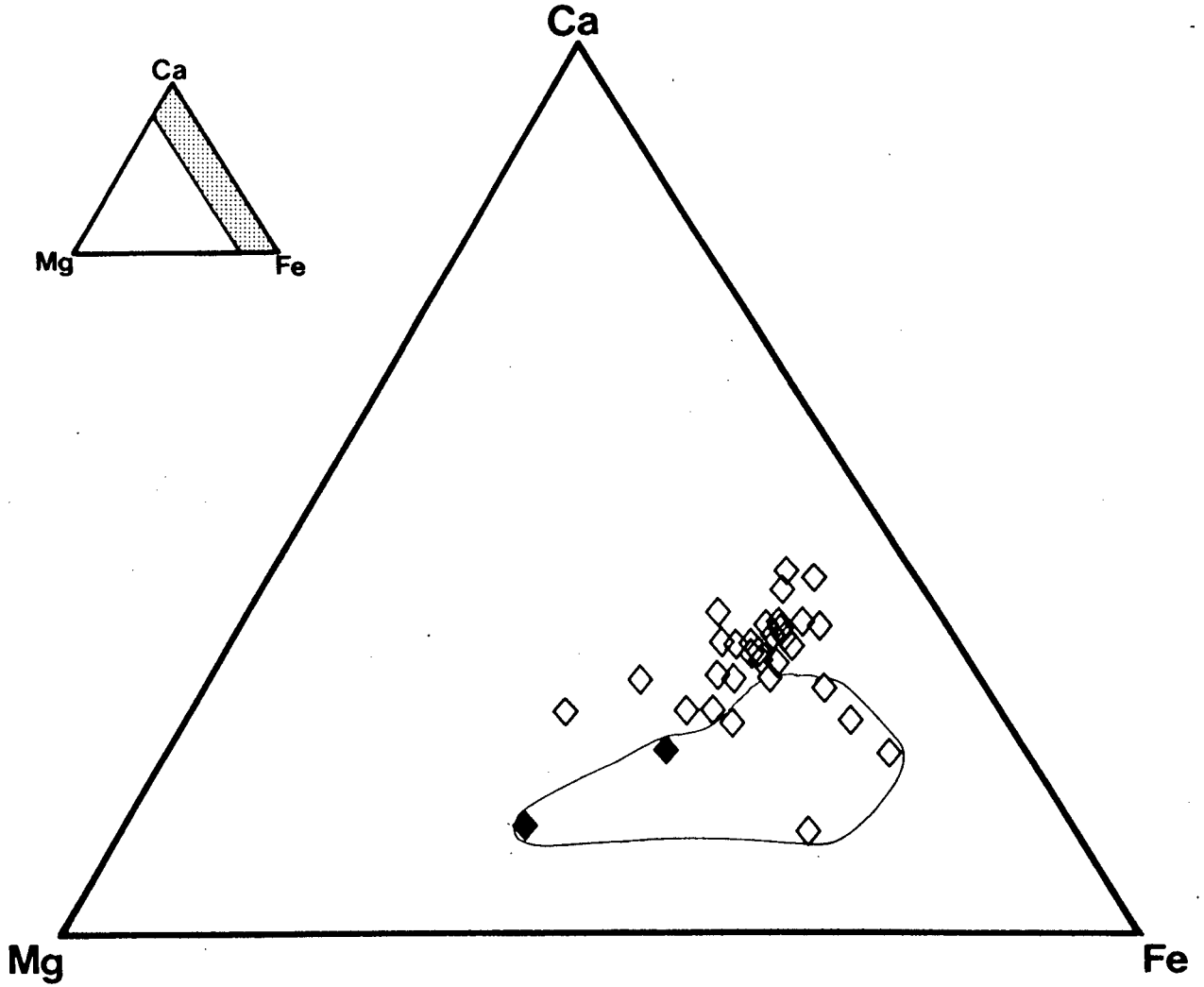


FIGURE 5.20 A portion of the Ca-Mg-Fe ternary diagram (top left, unstippled area) showing compositional variation of eclogitic garnets in Sloan diamonds. The field demarcates the Mn-rich garnets as defined in Chapter 4. The two garnets represented by filled symbols occur in Group II diamonds (as defined based on carbon isotope composition), whereas all other garnets (open symbols) occur in Group III diamonds.

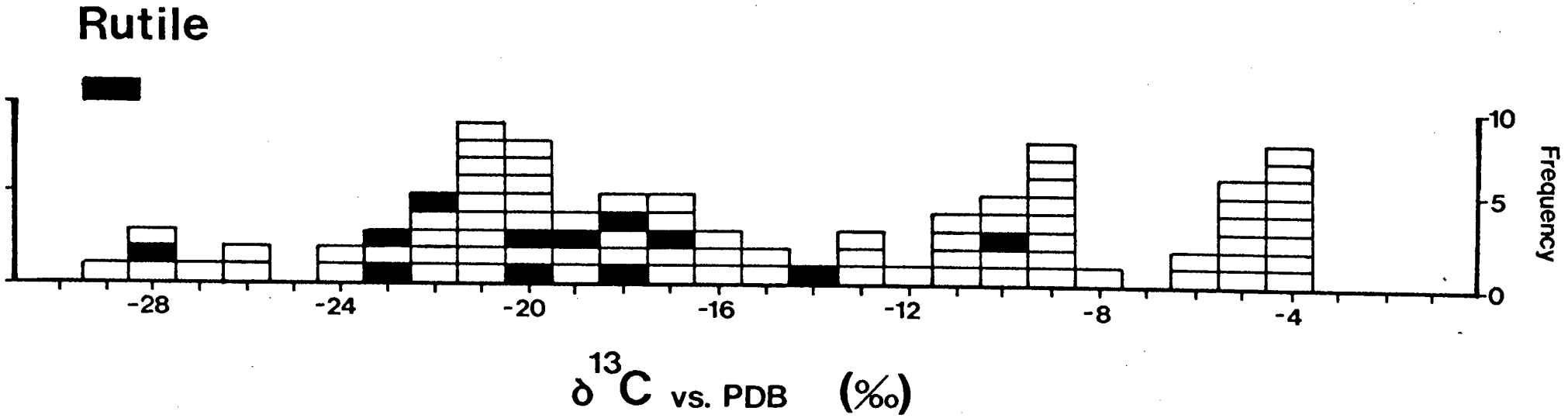


FIGURE 5.21 The occurrence of rutile inclusions in individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition.

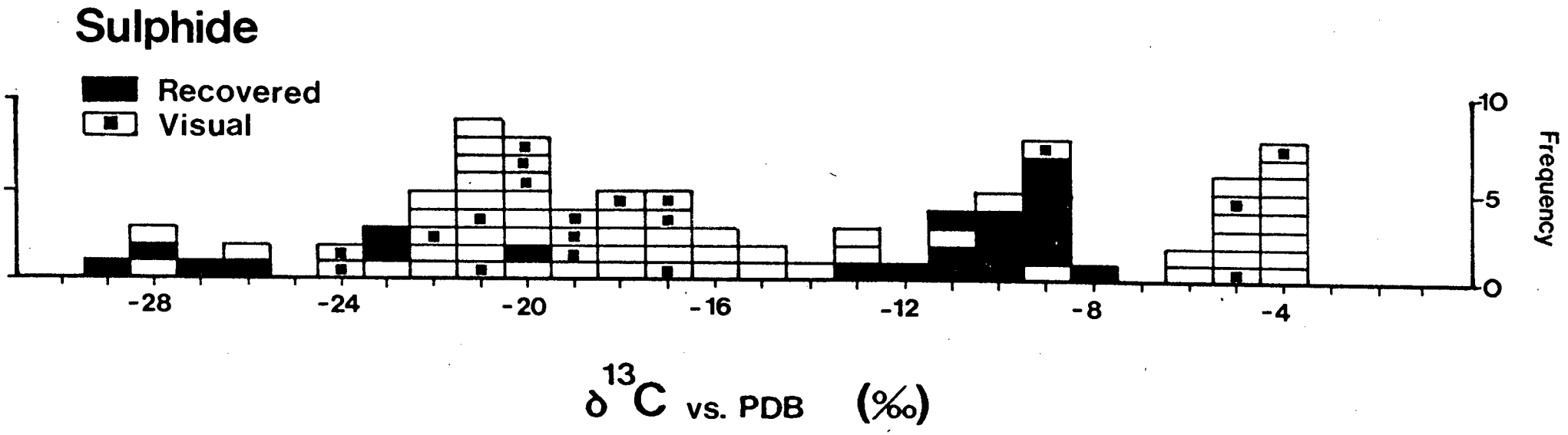


FIGURE 5.22 The occurrence of sulphide inclusions in individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition. Partially filled blocks represent diamonds in which sulphide rosettes were seen, but from which sulphide inclusions were not recovered.

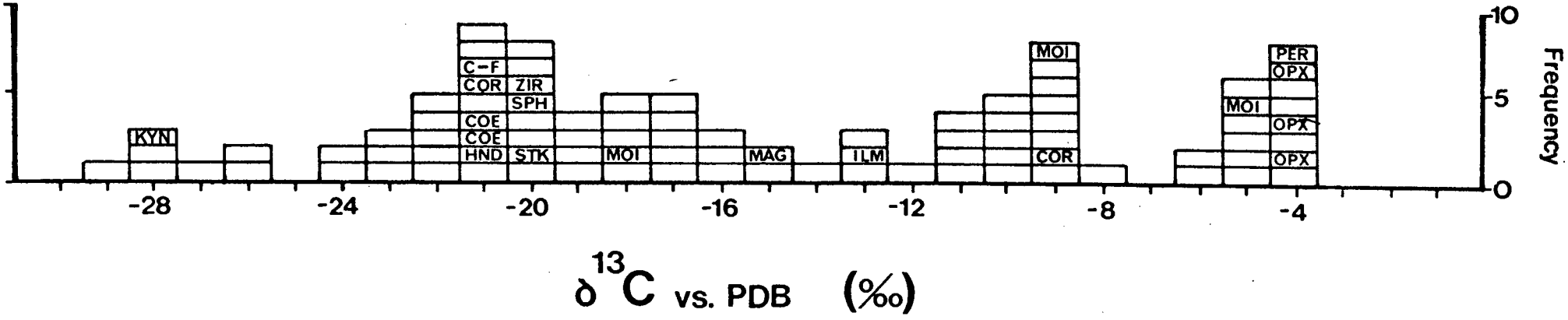


FIGURE 5.23 The occurrence of less common mineral inclusions in individual Sloan diamonds (see Key in Figure 5.8) is shown in relation to their carbon isotope composition.
OPX = Orthopyroxene; PER = Ferro-periclase; MOI = Moissanite; COR = Corundum; ILM = Ilmenite; MAG = Magnetite; STK = Si-Ti-K phase; SPH = Sphene; ZIR = Zircon; HND = Hornblende; COE = Coesite; C-F = Coesite + Feldspar; KYN = Kyanite.

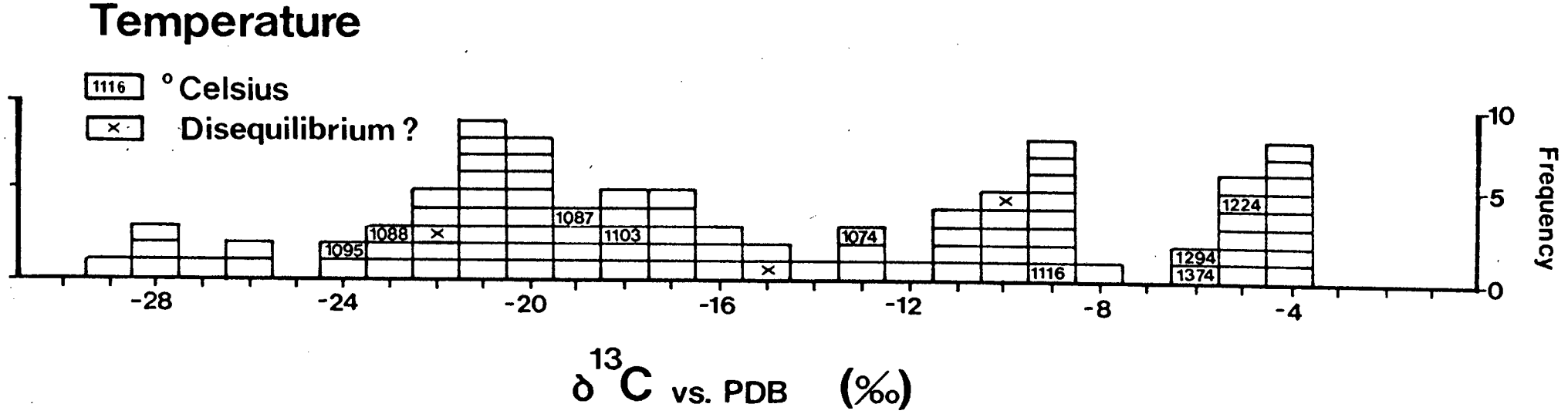


FIGURE 5.24 Equilibration temperatures for individual Sloan diamonds (see Key in Figure 5.8) in relation to their carbon isotope composition. The temperatures are calculated from mineral inclusion compositions as detailed in Chapter 4. The possible disequilibrium assemblages occur in diamonds SL 1-15, SL A46 and SL A57 as discussed in Chapter 4.

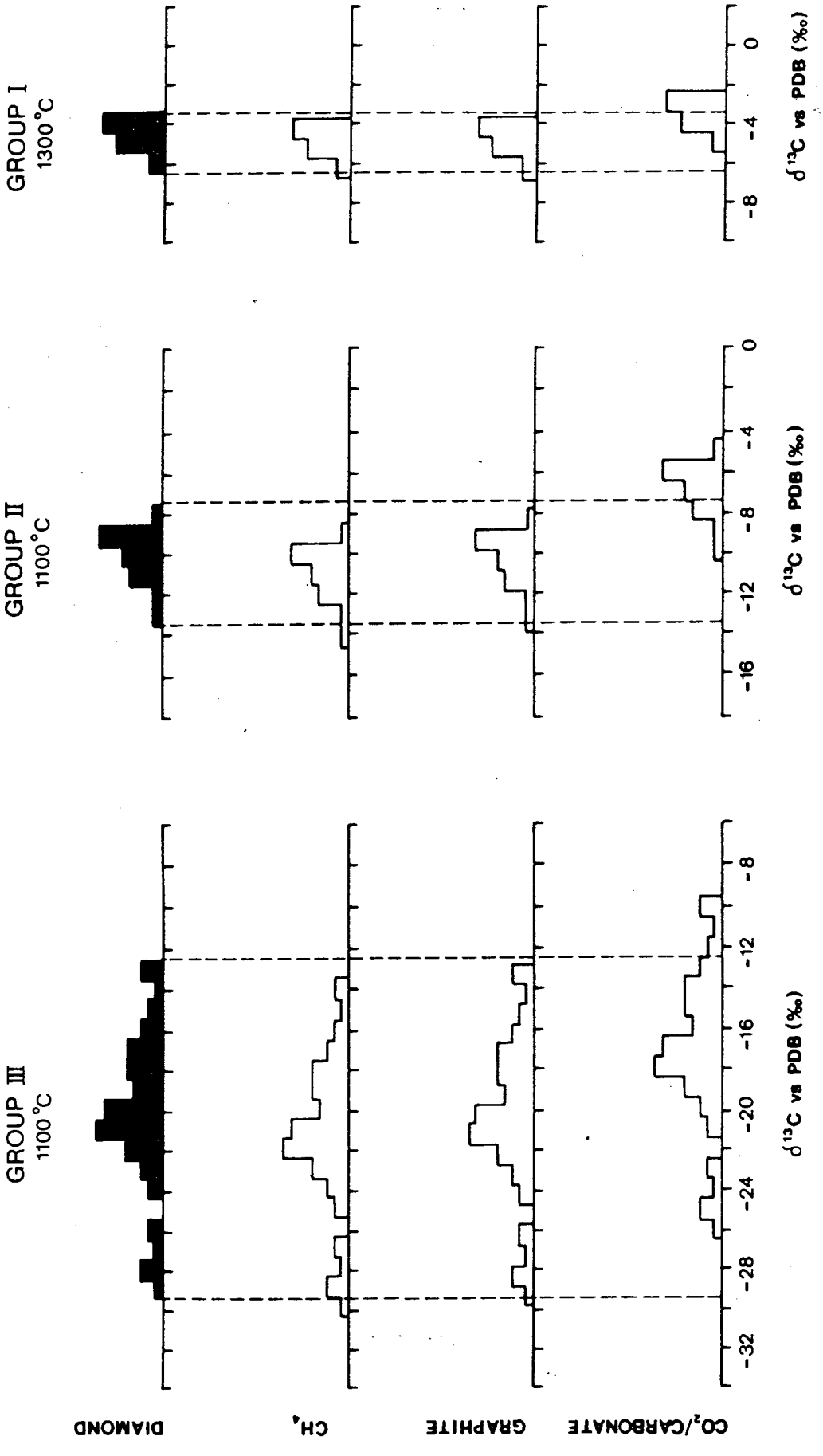


FIGURE 5.25 The $\delta^{13}C$ distribution of possible CH_4, Graphite and CO_2/Carbonate source reservoirs which could have produced the distribution observed for Groups I, II and III of Sloan diamonds by equilibrium (or fractional) crystallization in an open system where the source is continuously replenished in carbon of its initial composition.

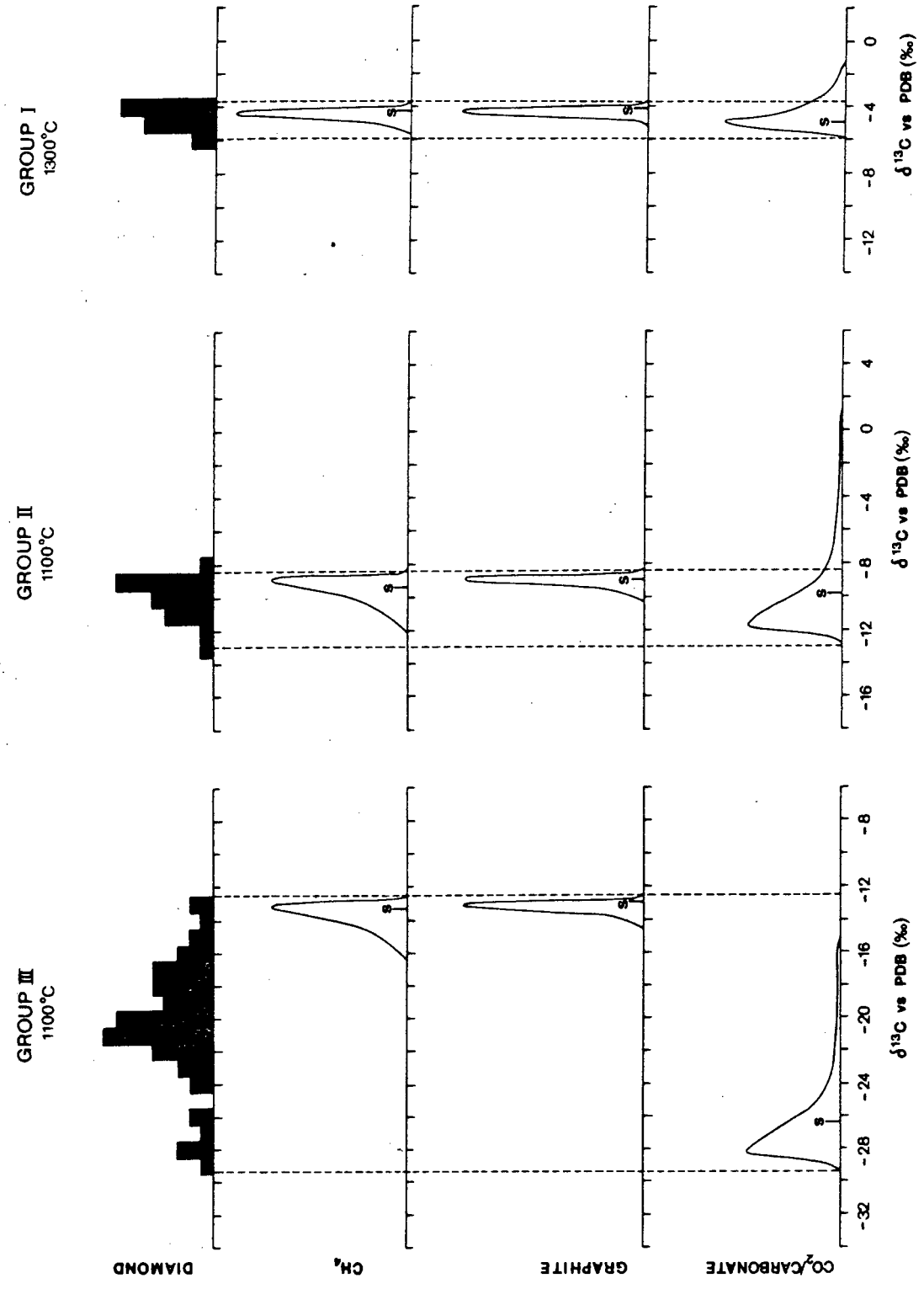


FIGURE 5.26 The ideal distribution shape and range of diamond $\delta^{13}C$ values which would be produced by 100% crystallization from CH_4, Graphite and CO_2/Carbonate sources in a closed system Rayleigh fractionation process is plotted beneath the actual distribution observed for Sloan diamonds from Groups I, II and III. The source $\delta^{13}C$ compositions represented by "s" are listed in Table 5.3. The curves are generated by determining the proportion of the diamond crystallized at 1 $^{o}/_{oo}$ intervals.

APPENDIX I

DIAMOND DESCRIPTION SCHEME

The characteristics of the Sloan diamonds, as well as those of their mineral inclusions, were described using the following description scheme. This method is similar to that formulated by Harris et al. (1975), but differs in two respects. Firstly, it allows for a more detailed description of diamond characteristics, including surface textures as described by Robinson (1979a). More importantly, it places emphasis on distinguishing primary features from secondary features. Primary features are those which the diamond acquired during growth, whereas secondary features are those which result from the modification of the diamond during post-crystallization events such as deformation and resorption. It is hoped that this approach provides a clearer picture of both the diamond growth environment and the events that diamonds experience subsequent to crystallization.

The scheme is organized into three major sections: Bureaucratic Details, Diamond Characteristics and Inclusion Characteristics. These sections are sub-divided as detailed below.

BUREAUCRATIC DETAILS

This section of the Diamond Description Scheme is project dependent. Presumably, the diamond parcel is from a specific, well-characterized locality such as a kimberlite diatreme or cluster, a lamproite, an alluvial dig, the sea or an aeolian deposit. The locality can be described in the text. Only those parameters not common to every diamond in the parcel should be included in the scheme. By way of example, the parameters noted for the Sloan diamond parcel are:

Kimberlite phase
Prospecting pit number
Recovery method
Sample type
Diamond sample number

Possible entries for these categories are listed in Table I-A.

DIAMOND CHARACTERISTICS

This section of the Diamond Description Scheme is divided into the following categories:

Crystal Shape
Crystal Size
Crystal Colour
Surface Features
Other Spectral Properties
Electrical Properties
Magnetic Properties
Isotopic Systematics
Trace Element Composition

Table I-B summarizes further sub-divisions and possible entries in each sub-division.

INCLUSION CHARACTERISTICS

This section of the Diamond Description Scheme is divided into the following categories:

Visual Assessment
Analytical Assessment

The Visual Assessment is an attempt at identifying the inclusion type (primary or secondary), phase and paragenesis based on inclusion transparency, colour and morphology. Although secondary inclusions and "clouds" are noted, no attempt is made at identifying them. Since a visual assessment is not definitive, it is best if inclusions can be removed from selected diamonds and analyzed.

The more comprehensive Analytical Assessment includes a listing of Primary and Secondary Minerals recovered. The final classification of inclusions as primary or secondary is best accomplished during the recovery operation using the Inclusion Description Scheme (Appendix IV). Primary inclusions are then further characterized by Sub-Paragenesis, Thermobarometry, Isotopic Systematics and Major and Trace Element Composition. Table I-C lists the possible entries for these sub-divisions.

APPENDIX I - TABLE A
BUREAUCRATIC DETAILS - eg. Sloan Diamond Parcel

Kimberlite Phase -- DK1 Black Border Phase
DK2 Eastern Green Phase
DK3 Quarry Phase
DK4 K Phase
DK4 Olivine Porphyry Phase
DK4 Light Green Spotted Phase
DK5 Sloan 2
DK5 Yellow Ground
DK6 Brown Porphyry Phase
SL5 Sloan 5
SL6 Sloan 6

Prospecting Pit Number -- 5, 8-10, 14, 15, 19, 20, 24-37, 38, 39-67.

Recovery Method -- Grease Table (G)
Jig (J)
Sortex (S)
Bulk Fusion (B)

Sample Type -- Production (P)
Xenolithic (X)
Synthetic (S)
Microdiamond (M)

Diamond Sample Number -- Four Separate Parcels -

Parcel I - 29 Stones - Numbers 1 - 29

Parcel II - 23 Stones - Numbers 1-1 - 1-23

Parcel III - 100 Stones - Numbers A1 - A100

Parcel IV - ~22,000 Stones - Numbered in sequence from 1-X for each test pit ie. for test pit no. 5, there are 99 stones numbered from 5-1 - 5-99.

APPENDIX I - TABLE B
DIAMOND CHARACTERISTICS - Crystal Shape

Crystal State -- Whole (W)
- Chipped (C)
Broken (B)
- Fragment (F)
Unknown (U)

Crystal Regularity -- Nearly Equidimensional (Q)
(Single forms only) Distorted (D)
- Flattened (F)
Unknown (U)

Primary Morphology
MAIN or SUBORDINATE -- Octahedron (O)
Cube (C)
Macle (Contact Twin) (M)
Penetrant twin (T)
Simple Aggregate (S)
Polycrystalline Aggregate (P)
- Coarse-grained (A)
- Fine-grained (F)
Rhombic Dodec (R)
Other (TTH, Sphere) (X)
Unknown (U)

SUBORDINATE -- Complex (W)

Resorption Morphology

MAIN --	Class 1	1-55% Preservation	(1)
	Class 2	~65% Preservation	(2)
	Class 3	~75% Preservation	(3)
	Class 4	~85% Preservation	(4)
	Class 5	~95% Preservation	(5)
	Unknown (U)		
SUBORDINATE --	Non-uniform resorption (N)		

APPENDIX I-TABLE B (cont.)
DIAMOND CHARACTERISTICS - Crystal Size

Pierres Sieve Class

Pierres Sieve Numbers	Measured Aperature Diameter (mm)	Approximate Average Mass (carats)	Sieve Classes	Scotts Sieve Numbers (Harris et al., 1979)
20	4.5	-	+20	13
19	4.3	.525	-20 +19	
18	4.1	.449	-19 +18	12
17	3.9	.410	-18 +17	
16	3.7	.330	-17 +16	
15	3.5	.278	-16 +15	11
14	3.3	.250	-15 +14	
13	3.1	.197	-14 +13	
12	2.9	.166	-13 +12	9
11	2.7	.128	-12 +11	
10	2.5	.110	-11 +10	7
9	2.3	.084	-10 +9	
8	2.1	.068	-9 +8	
7	1.9	.052	-8 +7	5
6	1.7	.038	-7 +6	
5	1.5	.029	-6 +5	3
4	1.4	.023	-5 +3	
3	1.3	.018		2
2	1.2	.015	-3 +1	
1	1.1	.012		1
0	1.0	.010	-1 +00	
00	.9	.008		
			-00	

Secondary Mass --
If weighed - Reported to the nearest .005 carat (1 mg)
If sieved - Average mass reported

Primary Mass --
- Calculated by dividing the diamond's present mass by its resorption class preservation value.
- Whole diamonds only

APPENDIX I - TABLE B (cont.)
DIAMOND CHARACTERISTICS - Crystal Colour

Transparency -- Transparent (T)
Opaque (O)
- Opaque due to Body Colour (B)
- Opaque due to Inclusions and Fracturing (I)
- Opaque due to Surface Coating (S)
- Opaque due to Surface Frosting (F)
- Opaque due to Fibrous Overgrowth (G)

Body Colour
MAIN or SUBORDINATE -- Colourless (C)
White (W)
Black (L)
Grey (D)
Brown (B)
Yellow (Y)
Amber (A)
Pink (P)
Green (G)
Blue (H)
Other (X)

Possible Combinations - Light Brown (CB or B-)
Dark Brown (B+)
Yellow Brown (YB)

APPENDIX I - TABLE B (cont.)
DIAMOND CHARACTERISTICS - Surface Features

Xenolithic --	Sharp edges (O)
	Smooth faces (S)
	Knob-like asperities (K)
	Ribbing (R)
	Serrate laminae (L)
	Pointed plates (P)
	Resorption channels (N)
	Intergrowth pits on unbroken surface (I)
	Graphite Coat/Intergrowth (G)
Deformation --	Lamination lines (L)
	Shagreen texture (S)
	Linear array of trigonal etch pits (A)
	Pyramidal hillocks (P)
Other -- Octa-	Triangular plates (A)
	Shield shaped laminae (B)
	Negatively-oriented trigonal etch pits (C)
	Hexagonal etch pits (D)
	Positively-oriented trigonal etch pits (E)
Cube-	Negatively-oriented tetragonal etch pits (F)
	Positively-oriented tetragonal etch pits (G)
	Crescentic steps (H)
Twin-	Macle line (I)
TTH-	Terraces (J)
	Elongate hillocks (K)
	Low relief surfaces (L)
	Zig-zag texture (M)
	Corrosion sculpture (N)
	Micro-disks (O)
	Circular micro-pits (P)
	Transverse hillocks (Q)
	Imbricate wedge forms (R)
	Rhombic serration (S)
Non-Restricted-	Polished surface (T)
	Ruts (U)
	Network patterns (V)
	Pitted hemispherical cavities (W)
	Pitted disks (X)
	Frosting (Y)
Abrasion-	Scratch-like markings (Z)
	Percussion figures (1)
	Spall scars (2)
	Ground surfaces or edges (3)
Breakage-	Cleavage break (4)
	Inclusion pit on broken surface (5)
Timing-	Resorption breakage surface (6)
Heating-	Green or Brown spots (7)
	Other (9)

APPENDIX I - TABLE B (cont.)
DIAMOND CHARACTERISTICS - Other Spectral Properties

UV Fluorescence -- Blue (B)
Yellow (Y)
Green (G)
Orange (O)
Purple (P)
Pink (K)
Lime (L)
White (W)
Non (N)
Possible Combinations - Weak blue (B-)
- Yellow green (YG)

Cathodoluminescence -- Blue (B)
Yellow (Y)
Green (G)
Non (N)

UV Absorption

IR Absorption

APPENDIX I - TABLE B (cont.)
DIAMOND CHARACTERISTICS - Other Properties

Electrical Properties

Magnetic Properties -- Magnetic (M)
Non-magnetic (N)

Isotopic Systematics -- $\delta^{13}C$
$\delta^{15}N$

Trace Element Composition

APPENDIX I - TABLE C
INCLUSION CHARACTERISTICS - Visual Assessment

Secondary Inclusions -- Present (P)
Absent (A)
Unknown (U)

Primary Inclusions
Primary Inclusion colour -- Transparent Inclusions

Colourless (C) - Olivine, Orthopyroxene, Coesite, Corundum, Sanidine
Purple (P) - Garnet
Orange (O) - Garnet
Green (G) - Cr-Diopside, Moissanite
Pale Green (L) - Omphacite
Red (R) - Garnet, Ruby
Amber (A) - Rutile, Garnet
Blue (B) - Kyanite
Brown (W) - Zircon, Ferro-periclase
Other (X)
Bimineralic (OL) - Eclogite

-- Opaque Inclusions

Sulphide (S)
Graphite (G)
Other (X) - Sulphide, Graphite, Chromite, Ilmenite, Fe metal
Cloud (C)

Diamond Paragenesis -- Eclogitic (E)
Peridotitic (P)
Unknown (U)

APPENDIX I - TABLE C (cont.)
INCLUSION CHARACTERISTICS - Analytical Assessment

Primary Minerals Recovered

Secondary Minerals Recovered

Paragenesis -- Peridotitic - Harzburgitic
Lherzolitic
Eclogitic - Websteritic
Grospyditic
Unknown

Thermobarometry -- Temperature (^{o}C)
Pressure (kbar)

Isotopic Systematics

Major and Trace Element Compositions

APPENDIX II

PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS (REPRESENTATIVE SAMPLE)

The physical characteristics described on the Representative sample of the Sloan diamonds are tabulated here. The diamonds are grouped by kimberlite phase (DK1-6) and within each group by sample number.

The abbreviated column headings are as follows:

DIAMOND NO.	-	Diamond sample number
PHA	-	Kimberlite phase
PT	-	Prospecting pit
ST	-	Crystal state
RG	-	Crystal regularity
MO	-	Primary morphology
SM	-	Sub-morphology
RC	-	Resorption class
NU	-	Non-uniform resorption
SV	-	Sieve class
MASS	-	Secondary mass
PRIM	-	Primary mass
CO	-	Colour
SC	-	Sub-colour
XENO	-	Xenolithic surface features
DEF	-	Deformation surface features
OTHER	-	Other surface features
T1	-	Transparent primary inclusion
T2	-	Transparent primary inclusion
T3	-	Transparent primary inclusion
O1	-	Opaque primary inclusion
O2	-	Opaque primary inclusion
PA	-	Paragenesis
2D	-	Secondary inclusions

These categories and the abbreviated entries are described in Appendix I. Note that the inclusion characteristics described here are based on a visual assessment only.

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL52-0001	DK1	52	U		A		U		+12	.166		G										U	U
SL52-0002	DK1	52	W	U	U		3		-00	.005	.007	G				BC				S		U	A
SL52-0003	DK1	52	W	D	S		5		+1	.012	.012	D		KRL		C						U	U
SL52-0004	DK1	52	B	U	O		5		+00	.008		B				C4						U	A
SL52-0005	DK1	52	B	F	O		5		-00	.005		B		KL	A	CY						U	A
SL52-0006	DK1	52	W	F	U		U		+00	.008		BY			L							U	A
SL52-0007	DK1	52	W	D	O	W	5		+2	.015	.015	C		KL		A				C		U	A
SL52-0008	DK1	52	W	D	O		3	N	-00	.005	.007	CD		L						S		U	A
SL52-0009	DK1	52	W	F	O		3		+7	.052	.069	B				C7						U	P
SL52-0010	DK1	52	W		S	O	5		+11	.128	.128	B		OLN			C					U	A
SL52-0011	DK1	52	B	U	O		2		+7	.052		CD				BC				S		U	P
SL52-0012	DK1	52	W	D	O	W	2		+8	.084	.129	CD				J7				S		U	P
SL52-0013	DK1	52	B	U	O	W	5		+7	.052		BD		L		A				X		U	P
SL52-0014	DK1	52	W		M		5		+7	.052	.052	D		L		A7	C			X		U	P
SL52-0015	DK1	52	B		S		4		+8	.038		B				B						U	P
SL52-0016	DK1	52	U	U	O		3	N	+8	.038		CD		KN						S		U	P
SL52-0017	DK1	52	B		M		2		+8	.038		D				I						U	P
SL52-0018	DK1	52	W		S		5		+5	.029	.029	B		N		A				S		U	P
SL52-0019	DK1	52	U	U	O		1		+5	.029		B				N				X		U	P
SL52-0020	DK1	52	W	D	O	W	2	N	+5	.029	.045	D		KG		O				S		U	P
SL52-0021	DK1	52	W	D	O	W	2	N	+5	.029	.045	CD			L	AJ						U	A
SL52-0022	DK1	52	B	U	O	W	4		+5	.029		B		L		A				X		U	P
SL52-0023	DK1	52	W	D	O		2		+5	.029	.045	CB				B				X		U	P
SL52-0024	DK1	52	W	D	O		2		+5	.029	.045	CD				JK				S		U	P
SL52-0025	DK1	52	U		S		5		+5	.028		D				A						U	P
SL52-0026	DK1	52	W		M		4		+5	.029	.034	D				BCI				S		U	P
SL52-0027	DK1	52	B	U	U		U		+4	.023		CB										U	A
SL52-0028	DK1	52	W	D	O	W	4		+4	.023	.027	D				BC				S		U	P
SL52-0029	DK1	52	W	D	O	W	3	N	+4	.023	.027	CD				A				X		U	A
SL52-0030	DK1	52	W	D	O	W	3		+3	.018	.024	D				B				X		U	P
SL52-0031	DK1	52	U	U	U		1		+3	.018		C										U	A
SL52-0032	DK1	52	U	U	U		1		+3	.018		CB		L						X		U	A
SL52-0033	DK1	52	W		S		3	N	+3	.018	.024	B				CD				X		U	P
SL52-0034	DK1	52	W	D	O		2		+3	.018	.028	B			L	J				X		U	A
SL52-0035	DK1	52	B	U	O		5		+3	.018		CB		KL						S		U	P
SL52-0036	DK1	52	W	D	O		3		+3	.018	.024	CB				C				X		U	P
SL52-0037	DK1	52	U		S		5		+3	.018		B				C				X		U	P
SL52-0038	DK1	52	B	U	O		4		+3	.018		BD								X		U	P
SL52-0039	DK1	52	B	U	O		3		+3	.018		BD								S		U	P
SL52-0040	DK1	52	W		S		2		+3	.018	.028	B										U	P
SL52-0041	DK1	52	W		M		4		+2	.015	.018	CD				C				X		U	P
SL52-0042	DK1	52	W	D	O		1		+2	.015	.027	CD		I		C				S		U	A
SL52-0043	DK1	52	W		S		1		+2	.015	.027	C										U	A
SL52-0044	DK1	52	B	U	O		4		+2	.015		CB				4				S		U	P
SL52-0045	DK1	52	B	U	O		5		+2	.015		CB	CD	L		A				S		U	P
SL52-0046	DK1	52	W	D	O	W	4	N	+2	.015	.018	CB				BC				X		U	P
SL52-0047	DK1	52	B	U	U		1		+2	.015		C										U	A
SL52-0048	DK1	52	W	D	O	W	3		+2	.015	.020	CD				AJ				X		U	A
SL52-0049	DK1	52	U	U	O		1		+2	.015		B										U	A
SL52-0050	DK1	52	U		S		4		+1	.012		C				B						U	P
SL52-0051	DK1	52	W		S		4		+1	.012	.014	CD								X		U	P
SL52-0052	DK1	52	B	U	U		4		+1	.012		B				B				S		U	P
SL52-0053	DK1	52	B	U	U		2		+1	.012		CB				J				X		U	P
SL52-0054	DK1	52	B	U	U		U		+1	.012		CB								S		U	P
SL52-0055	DK1	52	B		S	M	5		+1	.012		CB		KL								U	P
SL52-0056	DK1	52	B	U	O	C	4		+1	.012		CB		P		F						U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL52-0057	DK1	52	B	U	U		1		+1	.012		B		N	L	C6						U	P
SL52-0058	DK1	52	W	F	O		3		+1	.012	.018	CD				BC				S		U	P
SL52-0059	DK1	52	W		S		4	N	+1	.012	.014	CD		L						X		U	P
SL52-0060	DK1	52	B	U	O		1		+1	.012		B										U	P
SL52-0061	DK1	52	B	U	O		1		+0	.010		CD				40				S		U	P
SL52-0062	DK1	52	W	D	O		5		+0	.010	.010	CB		KL						X		U	P
SL52-0063	DK1	52	B	U	U		U		+0	.010		AB										U	P
SL52-0064	DK1	52	W	D	O		1		+0	.010	.018	B								X		U	P
SL52-0065	DK1	52	W		S		5		+0	.010	.010	D		LG		A				S		U	P
SL52-0066	DK1	52	U	U	O	W	2		+00	.008		C				B						U	P
SL52-0067	DK1	52	W	D	O		1		+00	.008	.015	C					O					E?	P
SL52-0068	DK1	52	U	U	U		U		+00	.008		CB										U	A
SL52-0069	DK1	52	B	U	O		5		+00	.008		B	D	L								U	P
SL52-0070	DK1	52	W	D	O		5		+00	.008	.008	CB		L		C				S		U	P
SL52-0071	DK1	52	W		S		3	N	+00	.008	.011	CB		L		A						U	A
SL52-0072	DK1	52	U	U	U		1		+00	.008		YB								X		U	P
SL52-0073	DK1	52	B	U	U		1		+00	.008		BD				5				S		U	P
SL52-0074	DK1	52	W	D	O	W	5		+00	.008	.008	CD				C						U	P
SL52-0075	DK1	52	W		M		2		+00	.008	.012	CD				CI				S		U	P
SL52-0076	DK1	52	B	U	O		5		+00	.008		C				4						U	P
SL52-0077	DK1	52	W		M		1		+00	.008	.015	CD				I						U	A
SL52-0078	DK1	52	W	D	O	W	5		+00	.008	.008	CB				A				X		U	P
SL52-0079	DK1	52	W		S		1		+00	.008	.015	D				C						U	P
SL52-0080	DK1	52	B	U	O		1		+00	.008		B				46						U	P
SL52-0081	DK1	52	W	D	O	W	1		+00	.008	.015	D				C				X		U	P
SL52-0082	DK1	52	W	D	O		1		+00	.008	.015	CD			L					X		U	A
SL52-0083	DK1	52	W	D	O		3		-00	.005	.007	CD	CB			BC						U	P
SL52-0084	DK1	52	B	U	O		5		-00	.005		CB		L								U	P
SL52-0085	DK1	52	W	D	O		2		-00	.005	.008	D				C				S		U	P
SL52-0086	DK1	52	W	D	O		4	N	-00	.005	.006	CB								S		U	P
SL52-0087	DK1	52	W	D	O		1		-00	.005	.009	CD										U	P
SL52-0088	DK1	52	U	U	O		1		-00	.005		CB								S		U	P
SL52-0089	DK1	52	B	U	O		1		-00	.005		CD				C						U	P
SL52-0090	DK1	52	W	D	O		1		-00	.005	.009	CD		N		K				S		U	P
SL52-0091	DK1	52	W	D	O		5		-00	.005	.005	C		L		A	C			X		U	A
SL52-0092	DK1	52	B	U	U		U		-00	.005		CB				CD						U	P
SL52-0093	DK1	52	B	U	O		U		-00	.005		CD								X		U	A
SL52-0094	DK1	52	B	U	O		5		-00	.005		CB				4						U	A
SL52-0095	DK1	52	U	U	U		1		-00	.005		B										U	A
SL52-0096	DK1	52	W	D	O	W	5		-00	.005	.005	C		K						S		U	A
SL52-0097	DK1	52	B	U	O		2		-00	.005		B										U	P
SL52-0098	DK1	52	W		S		4		-00	.005	.006	B								X		U	P
SL52-0099	DK1	52	W		M		4		-00	.005	.006	C				B				S		U	P
SL52-0100	DK1	52	U	U	U		1		-00	.005		AB										U	A
SL52-0101	DK1	52	W	D	O		2		-00	.005	.008	B				BCD						U	P
SL52-0102	DK1	52	B	U	O		3		-00	.005		B			L	6						U	P
SL52-0103	DK1	52	W	D	O	W	2		-00	.005	.008	CB				C				S		U	P
SL52-0104	DK1	52	B	U	U		U		-00	.005		C										U	A
SL52-0105	DK1	52	W	D	O		3		-00	.005	.007	BD				BCN						U	P
SL52-0106	DK1	52	W	D	O		3	N	-00	.005	.007	B				AC						U	A
SL52-0107	DK1	52	U	U	O		2		-00	.005		CD								S		U	A
SL52-0108	DK1	52	U	U	O		1		-00	.005		CB								S		U	A
SL52-0109	DK1	52	W	D	O	W	4		-00	.005	.006	B								X		U	P
SL52-0110	DK1	52	B	U	O		3		-00	.005		CB								X		U	P
SL52-0111	DK1	52	W		M		2		-00	.005	.008	CD										U	P
SL52-0112	DK1	52	B	U	U		U		-00	.005		C										U	A
SL52-0113	DK1	52	B	U	O		1		-00	.005		B				6						U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL52-0114	DK1	52	W	D	O		4		-00	.005	.006	CD		L						S		U	A
SL52-0115	DK1	52	B	U	O		3		-00	.005		CD								X		U	P
SL52-0116	DK1	52	U		S		4		-00	.005		CD	CB	I		C						U	P
SL52-0117	DK1	52	B	U	O		4		-00	.005		B								S		U	P
SL52-0118	DK1	52	B	U	O		4		-00	.005		B				4						U	P
SL52-0119	DK1	52	B	U	O		1		-00	.005		B				6						U	A
SL52-0120	DK1	52	B	U	O	W	5		-00	.005		CD		KL								U	P
SL52-0121	DK1	52	B	U	U		U		-00	.005		CB										U	P
SL52-0122	DK1	52	B	U	O		5		-00	.005		CB		K		7						U	P
SL52-0123	DK1	52	W	D	O		3	N	-00	.005	.007	CD								S		U	P
SL52-0124	DK1	52	U	U	O	W	1		-00	.005		B										U	P
SL52-0125	DK1	52	B	U	O	W	3		-00	.005		CD				A						U	P
SL52-0126	DK1	52	W	D	O		2		-00	.005	.008	B				C				S		U	P
SL52-0127	DK1	52	W	D	O		2		-00	.005	.008	CD										U	P
SL52-0128	DK1	52	W		M		1		-00	.005	.009	BD				CI				S		U	P
SL52-0129	DK1	52	U	U	O	W	U		-00	.005		CB										U	P
SL52-0130	DK1	52	W	D	O	W	4		-00	.005	.008	CP		K		BC						U	A
SL52-0131	DK1	52	W	D	O		4		-00	.005	.008	CP				C						U	A
SL52-0132	DK1	52	W	D	O	W	5		-00	.005	.005	CP		L						S		U	P
SL52-0133	DK1	52	B	U	O	W	5		-00	.005		CB										U	P
SL52-0134	DK1	52	W	D	O		5		-00	.005	.005	CP		L		A						U	A
SL52-0135	DK1	52	B	U	O		1		-00	.005		CB								X		U	P
SL52-0136	DK1	52	B	U	O		4		-00	.005		CB								X		U	A
SL52-0137	DK1	52	W	D	O		2		-00	.005	.008	CD								X		U	A
SLA050	DK1	52	W	D	O		2		+0	.010	.015	DB				BC						U	U
SLA051	DK1	52	B	U	O		4		+0	.010		YB										U	P
SLA097	DK1	52	W	Q	O		4		+0	.010	.012	B				C	A					E	P
SL53-0001	DK1	53	W	D	O	W	5		+6	.038	.038	B		L		B	W					U	A
SL53-0002	DK1	53	W	D	O		1		+13	.197	.358	DB								X		U	P
SL53-0003	DK1	53	B	U	O		3		+10	.110		CD				N46				S		U	A
SL53-0004	DK1	53	B		S		5		+9	.084		B				A						U	U
SL53-0005	DK1	53	B		S		4		+7	.052		B				B						U	P
SL53-0006	DK1	53	B	U	O		3		+6	.038		B				BC				S		U	P
SL53-0007	DK1	53	B	U	U		1		+6	.038		BD								S		U	P
SL53-0008	DK1	53	W	D	O	W	4	N	+6	.038	.045	B	CD	L						X		U	P
SL53-0009	DK1	53	W		S		5		+8	.038	.038	B		LI						S		U	P
SL53-0010	DK1	53	W	D	O		4		+6	.038	.045	C				CDNY						U	A
SL53-0011	DK1	53	W	D	O		5		+6	.038	.038	D		KL			O			S		E?	P
SL53-0012	DK1	53	B		S	M	4		+5	.029		B				B				S		U	P
SL53-0013	DK1	53	U	U	U		U		+5	.028		CD								X		U	P
SL53-0014	DK1	53	B	U	O	W	4		+5	.029		CD		L		C				S		U	P
SL53-0015	DK1	53	W	D	O	W	3		+4	.023	.031	B				J				X		U	P
SL53-0016	DK1	53	U	U	U		U		+4	.023		D								X		U	P
SL53-0017	DK1	53	W	D	O		5		+4	.023	.023	D		KL						S		U	P
SL53-0018	DK1	53	B	U	O	W	4		+4	.023		CD		K		C				S		U	P
SL53-0019	DK1	53	B	U	O	W	U		+3	.018		C				C						U	A
SL53-0020	DK1	53	U	U	U		1		+3	.018		CD										U	A
SL53-0021	DK1	53	W		M		3		+3	.018	.024	D		L		I						U	P
SL53-0022	DK1	53	B	D	O		3	N	+3	.018		DB										U	P
SL53-0023	DK1	53	B		M		U		+3	.018		BD				I				X		U	P
SL53-0024	DK1	53	B	U	O		1		+2	.015		CB				CB				S		U	P
SL53-0025	DK1	53	U	U	O	W	3	N	+2	.015		CB		N	L	BC				S		U	P
SL53-0026	DK1	53	U	U	O		4		+2	.015		DB				56				S		U	P
SL53-0027	DK1	53	U	U	O		1		+2	.015		AB	BD							S		U	P
SL53-0028	DK1	53	U		S		3		+2	.015		CB				C						U	P
SL53-0029	DK1	53	W	D	O	W	4		+2	.015	.018	CD				AC				S		U	P
SL53-0030	DK1	53	W		M		5		+2	.015	.015	C		N		C	C					U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL53-0031	DK1	53	W	D	O		4	N	+2	.015	.018	B	D	L								U	P
SL53-0032	DK1	53	W	D	O		3		+2	.015	.020	CD		N						X		U	P
SL53-0033	DK1	53	B	U	O		1		+1	.012		CD										U	P
SL53-0034	DK1	53	B	U	O		1		+1	.012		CD				6				S		U	P
SL53-0035	DK1	53	B	U	O	W	5		+1	.012		D		L						X		U	P
SL53-0036	DK1	53	U		M		5		+1	.012		D				IY						U	P
SL53-0037	DK1	53	B	U	O		3		+1	.012		B				B				S		U	P
SL53-0038	DK1	53	W		S		U		+1	.012		CB				N				X		U	P
SL53-0039	DK1	53	U	U	O		3		+1	.012		B				C						U	P
SL53-0040	DK1	53	W		S		5		+1	.012	.012	D								S		U	P
SL53-0041	DK1	53	U	U	O		3		+1	.012		CB										U	P
SL53-0042	DK1	53	W	D	O		3	N	+0	.010	.013	C								X		U	A
SL53-0043	DK1	53	B	U	O		3		+0	.010		B				C				X		U	P
SL53-0044	DK1	53	B	U	O		U		+0	.010		B				6				X		U	P
SL53-0045	DK1	53	B	U	O		1		+0	.010		B				46				X		U	P
SL53-0046	DK1	53	U	U	O		1		+0	.010		CB		N						S		U	P
SL53-0047	DK1	53	B	U	O		3		+0	.010		CD				8				S		U	P
SL53-0048	DK1	53	W	D	O		4		+0	.010	.012	B	D	I		C				S		U	P
SL53-0049	DK1	53	U	U	O		1		+0	.010		CB										U	A
SL53-0050	DK1	53	U	U	U		1		+0	.010		CD								X		U	A
SL53-0051	DK1	53	U	U	O	W	4		+00	.008		DB				A				X		U	P
SL53-0052	DK1	53	B	U	O		5		+00	.008		CB		KR		C4				S		U	A
SL53-0053	DK1	53	W	D	O	W	3		+00	.008	.011	CD				C						U	P
SL53-0054	DK1	53	B	U	O		1		+00	.008		B				C8				X		U	P
SL53-0055	DK1	53	B	U	O		1		+00	.008		CB				48				X		U	P
SL53-0056	DK1	53	B		S		5		+00	.008		D		L		C				S		U	P
SL53-0057	DK1	53	W	D	O		2		+00	.008	.012	B				B						U	P
SL53-0058	DK1	53	W	D	O		3		+00	.008	.011	CD				BC				X		U	P
SL53-0059	DK1	53	W	D	O		4		+00	.008	.008	CD				C				S		U	P
SL53-0060	DK1	53	W		M		5		+00	.008	.008	D				I				S		U	P
SL53-0061	DK1	53	B	U	O	W	3		+00	.008		B				C46				S		U	P
SL53-0062	DK1	53	W	D	O		1		+00	.008	.015	B								X		U	P
SL53-0063	DK1	53	W	D	O		1		+00	.008	.015	B				J						U	A
SL53-0064	DK1	53	W	D	O		2		+00	.008	.012	D	B			C				S		U	P
SL53-0065	DK1	53	U	U	O		3	N	+00	.008		D								S		U	P
SL53-0066	DK1	53	W	D	O		5		+00	.008	.008	D	B	K		A						U	P
SL53-0067	DK1	53	W	D	O		2		+00	.008	.012	B		I						S		U	P
SL53-0068	DK1	53	U	U	O		1		+00	.008		CD								S		U	P
SL53-0069	DK1	53	W		M		4		+00	.008	.009	CD				BI				S		U	P
SL53-0070	DK1	53	W		M		3		+00	.008	.011	CD				AB						U	P
SL53-0071	DK1	53	U	U	O		1		+00	.008		C								S		U	A
SL53-0072	DK1	53	W	D	O		2		-00	.005	.008	CB				B				X		U	P
SL53-0073	DK1	53	U	U	U		U		-00	.005		B				CD				X		U	P
SL53-0074	DK1	53	W	D	O		2		-00	.005	.008	CD				BN				S		U	P
SL53-0075	DK1	53	B	U	U		U		-00	.005		D		G								U	U
SL53-0076	DK1	53	U	U	O		U		-00	.005		B				C				S		U	P
SL53-0077	DK1	53	U	U	O		5		-00	.005		CB		L		C4				S		U	P
SL53-0078	DK1	53	W	D	O		1		-00	.005	.009	D								S		U	P
SL53-0079	DK1	53	W	D	O		1		-00	.005	.009	CB								X		U	A
SL53-0080	DK1	53	W	D	O		3	N	-00	.005	.007	BD								X		U	P
SL53-0081	DK1	53	W	D	O		1		-00	.005	.009	CD								X		U	P
SL53-0082	DK1	53	W	D	U		U		-00	.005		DB										U	A
SL53-0083	DK1	53	W	D	O		3		-00	.005	.007	CD				C	C			X		U	A
SL53-0084	DK1	53	W		M		4		-00	.005	.008	CB				I				X		U	P
SL53-0085	DK1	53	U	U	O	W	4		-00	.005		D		LNG		AC						U	P
SL53-0086	DK1	53	B		S		4		-00	.005		B				A4						U	P
SL53-0087	DK1	53	B	U	O		1		-00	.005		CB				4						U	A

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL53-0088	DK1	53	U	U	O		1		-00	.005		DB								X		U	P
SL53-0089	DK1	53	U		S		1		-00	.005		D								S		U	P
SL53-0090	DK1	53	U	U	U		1		-00	.005		B										U	A
SL53-0091	DK1	53	U		M		U		-00	.005		CD		L		A						U	A
SL53-0092	DK1	53	W		M		3	N	-00	.005	.007	CD				A				S		U	A
SL53-0093	DK1	53	W	D	O		4		-00	.005	.008	D		I		BC						U	P
SL53-0094	DK1	53	U	U	O		5		-00	.005		B		L		C				X		U	P
SL53-0095	DK1	53	W	D	O	W	2		-00	.005	.008	B	BD									U	P
SL53-0098	DK1	53	B	U	O		U		-00	.005		B	D									U	P
SL53-0097	DK1	53	B	U	O	W	U		-00	.005		CB										U	A
SL53-0098	DK1	53	W	D	O		1		-00	.005	.009	D								S		U	P
SL53-0099	DK1	53	U	U	O	W	1		-00	.005		CD		I		C						U	A
SL53-0100	DK1	53	B	U	U		U		-00	.005		CB		K						S		U	P
SL53-0101	DK1	53	W		M		2		-00	.005	.008	CB				I				X		U	A
SL53-0102	DK1	53	W	D	O	W	4		-00	.005	.006	D		I		A				S		U	P
SL53-0103	DK1	53	W	D	O		2		-00	.005	.008	CB										U	P
SL53-0104	DK1	53	U	U	O		3		-00	.005		CB				C				S		U	P
SL53-0105	DK1	53	W	D	O	R	4		-00	.005	.006	D				A						U	P
SL53-0106	DK1	53	W	D	O		5		-00	.005	.005	CD		L						S		U	P
SL53-0107	DK1	53	W	D	U		U		-00	.005		CD										U	A
SL53-0108	DK1	53	W	D	O		4		-00	.005	.006	CD				C				S	X	U	P
SL53-0109	DK1	53	U	U	U		1		-00	.005		CD				C				S		U	P
SL53-0110	DK1	53	B	U	O		U		-00	.005		C				4				X		U	P
SL53-0111	DK1	53	U	U	O		1		-00	.005		B				C				S		U	P
SL53-0112	DK1	53	B	U	O	W	5		-00	.005		CD		KL		45						U	P
SL53-0113	DK1	53	W	D	O		1		-00	.005	.009	CD				K				X		U	A
SL53-0114	DK1	53	W	D	O		1		-00	.005	.009	CD		I		C				X		U	A
SL53-0115	DK1	53	B	U	O		3		-00	.005		CB				C46				S		U	P
SL53-0116	DK1	53	W		M		1		-00	.005	.009	CD		I								U	A
SL53-0117	DK1	53	W	D	O		5		-00	.005	.005	CD		L						X		U	A
SL53-0118	DK1	53	W		S		3		-00	.005	.007	D		I						S		U	P
SL53-0119	DK1	53	W	D	O		1		-00	.005	.009	B				N				X		U	P
SL53-0120	DK1	53	B	U	O		1		-00	.005		B										U	A
SL53-0121	DK1	53	U		S		4		-00	.005		CD				A				X		U	P
SL53-0122	DK1	53	W	D	O		2		-00	.005	.008	D								S		U	P
SL53-0123	DK1	53	W		S		2		-00	.005	.008	B				BC				S		U	A
SL53-0124	DK1	53	W	D	O		2		-00	.005	.008	B				J				X		U	P
SL53-0125	DK1	53	U	U	O		1		-00	.005		CB								X		U	A
SL53-0126	DK1	53	B	U	O		2		-00	.005		B				C5						U	A
SL53-0128	DK1	53	U	U	O	W	5		-00	.005		D				AC						U	P
SL53-0129	DK1	53	U	U	O		2		-00	.005		BD		N								U	P
SL53-0130	DK1	53	B	U	U		U		-00	.005		CD				4				S		U	P
SL53-0131	DK1	53	W	D	O		1		-00	.005	.009	CD										U	A
SL53-0132	DK1	53	W	D	O		3		-00	.005	.007	D				J				S		U	P
SL53-0133	DK1	53	B	U	O		2		-00	.005		CD				CJ6				S		U	P
SL53-0134	DK1	53	W		M		5		-00	.005	.005	CB		K		AI						U	P
SL53-0135	DK1	53	U	U	O		3		-00	.005		CD				B				S		U	A
SL53-0136	DK1	53	U	U	O		2		-00	.005		B				C						U	P
SL53-0137	DK1	53	W		M		5		-00	.005	.005	CD				A						U	P
SL53-0138	DK1	53	W	D	O		5		-00	.005	.005	CD		L								U	P
SL53-0139	DK1	53	U	U	O		1		-00	.005		B		N								U	A
SL53-0140	DK1	53	W	D	O	W	5		-00	.005	.005	D	B	L		A				S		U	P
SL53-0141	DK1	53	B	U	O		3		-00	.005		CD				C4				S		U	P
SL53-0142	DK1	53	B	U	O		5		-00	.005		CB		KR						X		U	P
SL53-0143	DK1	53	W	D	O	W	5		-00	.005	.005	D		K		A				X		U	P
SL53-0144	DK1	53	B	U	O		1		-00	.005		B				4						U	A
SL53-0145	DK1	53	B	U	O		4		-00	.005		CD		KL						S		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL53-0146	DK1	53	W	D	O	W	5		-00	.005	.005	D		KL		A				X		U	P
SL53-0147	DK1	53	U	U	U		1		-00	.005		DB								S		U	A
SL53-0148	DK1	53	W	D	O		3		-00	.005	.007	CD				BC				X		U	A
SL53-0149	DK1	53	W		M		5		-00	.005	.005	CB		L		A				S		U	P
SL53-0150	DK1	53	W		S		4		-00	.005	.006	B								X		U	P
SL53-0151	DK1	53	B	U	U		U		-00	.005		CD				N				S		U	A
SL53-0152	DK1	53	W		S		4		-00	.005	.006	CD		L		C				S		U	P
SL53-0153	DK1	53	B	U	O		2		-00	.005		CB				45						U	P
SL53-0154	DK1	53	W	D	O		2		-00	.005	.008	B								X		U	P
SL53-0155	DK1	53	W		S		4		-00	.005	.006	C				BC				X		U	P
SL53-0156	DK1	53	W		S		4		-00	.005	.006	CD										U	P
SL53-0157	DK1	53	B	U	O	W	4		-00	.005		D				BC				X		U	P
SL53-0158	DK1	53	W	D	O		1		-00	.005	.009	B										U	A
SLA049	DK1	53	B	U	O		4		+0	.010		Y				C						E	P
SL05-0001	DK2	05	W		S		4	N	+1	.013	.015	CB		OSL						S		U	A
SL05-0002	DK2	05	W	D	O	W	5		+4	.023	.023	CB				AC				X		U	P
SL05-0003	DK2	05	U	U	O		3		+6	.048		CB	B			CF56				S		U	P
SL05-0004	DK2	05	W		M		3		+7	.063	.084	C				BCI	OL	O	L	S		E	A
SL05-0005	DK2	05	W	D	O		4	N	+1	.013	.015	CB	B	G		A						U	P
SL05-0006	DK2	05	B	D	O		5		+9	.084		D		KG			O					E?	P
SL05-0007	DK2	05	W	D	O		2		+8	.063	.097	D				K				S		U	P
SL05-0008	DK2	05	B	D	O		1		+8	.063		CB		G		CK						U	A
SL05-0009	DK2	05	B		A		5		+8	.083		BA		G								U	U
SL05-0010	DK2	05	U	U	U		U		+7	.052		AB		G								U	U
SL05-0011	DK2	05	B	D	O		1		+6	.038		BA			L					S		U	A
SL05-0012	DK2	05	B	Q	O		5		+6	.038		BG		KL						X		U	P
SL05-0013	DK2	05	B		A		4		+6	.038		AB		L						X		U	P
SL05-0014	DK2	05	B	D	O		1		+6	.038		CB										U	A
SL05-0015	DK2	05	B		A	M	3		+6	.038		CB				BI				S	X	U	P
SL05-0016	DK2	05	B	U	U		U		+6	.038		CB								X		U	A
SL05-0017	DK2	05	B	U	U		5		+5	.029		D		G						X		U	P
SL05-0018	DK2	05	B	U	U		U		+5	.028		CB								S		U	A
SL05-0019	DK2	05	W		M		5		+4	.023	.023	D		KL		I				S		U	P
SL05-0020	DK2	05	B	D	O		2		+4	.023		B	CB			5				S		U	A
SL05-0021	DK2	05	B	D	O		1		+4	.023		BA				K						U	P
SL05-0022	DK2	05	B	D	O		4		+4	.023		B		K		5						U	P
SL05-0023	DK2	05	B	D	O		3		+4	.023		CB				K				X		U	P
SL05-0024	DK2	05	B	U	U		1		+4	.023		A				U						U	P
SL05-0025	DK2	05	U	U	U		1		+4	.023		BP										U	U
SL05-0026	DK2	05	W	D	O		3		+4	.023	.031	CB				K						U	A
SL05-0027	DK2	05	B	D	O	W	5		+3	.018		CB				5				S		U	P
SL05-0028	DK2	05	W	D	O		1		+3	.018	.033	C				J				X		U	A
SL05-0029	DK2	05	B	D	O		5		+3	.018		B		KL						X		U	P
SL05-0030	DK2	05	B	D	O		5		+3	.018		B		K								U	P
SL05-0031	DK2	05	W	D	O		2		+3	.018	.028	B										U	P
SL05-0032	DK2	05	W	D	O	W	4		+3	.018	.021	CB	B							S		U	P
SL05-0033	DK2	05	B	D	O		2	N	+3	.018		DB								S		U	P
SL05-0034	DK2	05	W	D	O		3		+3	.018	.024	C				C				S		U	P
SL05-0035	DK2	05	W	U	U		1		+3	.018	.033	CB				KU				X		U	A
SL05-0036	DK2	05	U	U	U		U		+3	.018		GB										U	U
SL05-0037	DK2	05	B	D	O		U		+3	.018		B	C							S		U	P
SL05-0038	DK2	05	B	U	U		U		+3	.018		B								S		U	P
SL05-0039	DK2	05	B	D	O		5		+2	.015		B	C			C						U	P
SL05-0040	DK2	05	B	D	O		2		+2	.015		B								X		U	P
SL05-0041	DK2	05	U	U	U		3	N	+2	.015		D		L						S		U	A
SL05-0042	DK2	05	B	D	O		2		+2	.015		BA		L		K				X		U	A
SL05-0043	DK2	05	B	D	O		3		+2	.015		B								X		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	ZD
SL05-0044	DK2	05	W	Q	O		3		+2	.015	.020	B										U	A
SL05-0045	DK2	05	W	D	O		2		+2	.015	.023	BA								X		U	A
SL05-0046	DK2	05	B	D	O		1		+2	.015		B								X		U	P
SL05-0047	DK2	05	W	D	O	W	1		+2	.015	.027	C	B			K				X		U	P
SL05-0048	DK2	05	W	D	O		4		+1	.012	.014	C										U	A
SL05-0049	DK2	05	B		A		5		+1	.012		D		LG								U	P
SL05-0050	DK2	05	B	D	C		U		+1	.012		B				H						U	U
SL05-0051	DK2	05	W	Q	O	R	5		+1	.012	.012	CB		KL						X		U	A
SL05-0052	DK2	05	W	D	O	W	5		+1	.012	.012	CB		K								U	A
SL05-0053	DK2	05	W	D	O		1		+1	.012	.022	CB										U	A
SL05-0054	DK2	05	W		S		4		+1	.012	.014	CB										U	A
SL05-0055	DK2	05	W	D	O	W	4		+1	.012	.014	B								X		U	P
SL05-0056	DK2	05	B	D	O	W	4		+1	.012		CB		K						X		U	P
SL05-0057	DK2	05	B	U	U		U		+1	.012		CB				5						U	P
SL05-0058	DK2	05	W	U	U		1		+1	.012	.022	CB			L	L						U	P
SL05-0059	DK2	05	W		A		4		+1	.012	.014	BA					L			X		U	A
SL05-0060	DK2	05	B	D	O	W	4		+0	.010		GB								X		U	A
SL05-0061	DK2	05	B	U	U		1		+0	.010		GB								X		U	P
SL05-0062	DK2	05	W	D	O		1		+0	.010	.018	C					P					U	P
SL05-0063	DK2	05	B	D	O	C	1		+0	.010		CB				H				X		U	A
SL05-0064	DK2	05	W		M		4		+0	.010	.012	CB				I	C					U	P
SL05-0065	DK2	05	B	U	U		1		+0	.010		B										U	P
SL05-0066	DK2	05	B	U	U		U		+0	.010		CB										U	P
SL05-0067	DK2	05	U	U	U		U		+0	.010		GB										U	U
SL05-0068	DK2	05	B	U	U		U		+0	.010		B								S		U	P
SL05-0069	DK2	05	W		A		3		+0	.010	.013	B				C				S		U	P
SL05-0070	DK2	05	W	D	O		3	N	+0	.010	.013	BA								X		U	A
SL05-0071	DK2	05	B	D	O		4		+0	.010		D								X		U	P
SL05-0072	DK2	05	B	U	U		1		+0	.010		CB				5						U	A
SL05-0073	DK2	05	B	U	U		U		+00	.008		CB										U	A
SL05-0074	DK2	05	B	D	O		4		+00	.008		CB										U	P
SL05-0075	DK2	05	U	U	U		U		+00	.008		CB				FH						U	U
SL05-0078	DK2	05	U	U	U		1		+00	.008		CB				H				S		U	P
SL05-0077	DK2	05	B	D	O		3		+00	.008		CB				7				S		U	P
SL05-0076	DK2	05	W	D	O		3		+00	.008	.011	CB	B			JK				S		U	P
SL05-0079	DK2	05	W	D	O		1		-00	.005	.009	CB										U	A
SL05-0080	DK2	05	B	U	U		1		-00	.005		CB										U	A
SL05-0081	DK2	05	W	D	O		2		-00	.005	.008	CB										U	P
SL05-0082	DK2	05	B	D	O		1		-00	.005		C				K5				S		U	P
SL05-0083	DK2	05	B	U	U		1		-00	.005		B	CB							S		U	A
SL05-0084	DK2	05	B	D	O		3		-00	.005		CB										U	A
SL05-0085	DK2	05	W		S		5		-00	.005	.005	B		G						S		U	P
SL05-0086	DK2	05	W	D	O		2		-00	.005	.008	CB				J						U	A
SL05-0087	DK2	05	U	U	U		U		-00	.005		BG										U	A
SL05-0088	DK2	05	W		M		2	N	-00	.005	.008	CB				I						U	A
SL05-0089	DK2	05	B	U	U		1		-00	.005		CG								S		U	A
SL05-0090	DK2	05	U	U	U		U		-00	.005		CB				C						U	U
SL05-0091	DK2	05	B	D	O		4		-00	.005		GB								X		U	P
SL05-0092	DK2	05	B	U	U		U		-00	.005		CB										U	U
SL05-0093	DK2	05	W	D	O		1		-00	.005	.009	CB								X		U	A
SL05-0094	DK2	05	B	U	U		U		-00	.005		B								S		U	P
SL05-0095	DK2	05	W	U	U		1		-00	.005	.009	D				7						U	A
SL05-0096	DK2	05	B	D	O		4		-00	.005		B								S		U	P
SL05-0097	DK2	05	B		A		4		-00	.005		GB								X		U	P
SL05-0098	DK2	05	W		M		5		-00	.005	.005	C		O		I						U	P
SL08-0001	DK2	08	W	D	O		5		+1	.011	.011	CB	C	O		AC				S		U	A
SL08-0002	DK2	08	B	Q	O		1		+8	.042		A								X		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL08-0003	DK2	08	B	U	O		5		+8	.040		C		L		A57	O	L		S		E	P
SL08-0004	DK2	08	B	D	O	W	5		+8	.082		CB		SL		A				S		U	P
SL08-0005	DK2	08	W	D	O		3		+1	.013	.017	CB		N		BC7	C	O				E?	A
SL08-0008	DK2	08	W	Q	O		5		+8	.082	.082	C		OSI		CY	O	A		S		E?	P
SL08-0007	DK2	08	W	Q	O	C	U		-00	.005		C		K						X		U	A
SL08-0008	DK2	08	W		M		5		-00	.005	.005	CB				I				X		U	P
SL08-0009	DK2	08	B	Q	O		1		-00	.005		CB								S		U	P
SL08-0010	DK2	08	B	U	U		U		-00	.005		CB								X		U	P
SL08-0011	DK2	08	U	U	U		1		-00	.005		B	CB									U	A
SL08-0012	DK2	08	W	D	O	W	5		-00	.005	.005	D		K						X		U	P
SL08-0013	DK2	08	B	D	O		3		-00	.005		CB	B									U	A
SL08-0014	DK2	08	W	D	O		2		-00	.005	.008	B				C						U	A
SL08-0015	DK2	08	B	U	U		U		-00	.005		C								X		U	P
SL08-0018	DK2	08	B	U	U		U		-00	.005		CB				C				S		U	P
SL08-0017	DK2	08	B	D	O		1		-00	.005		B					C			X		U	P
SL08-0018	DK2	08	B	D	O		4		-00	.005		CB										U	P
SL08-0019	DK2	08	W		S		5		-00	.005	.005	CB		S								U	A
SL08-0020	DK2	08	W	D	O		4		-00	.005	.006	CB		K								U	A
SL08-0021	DK2	08	W	Q	O		4		-00	.005	.006	D				B	C					U	A
SL08-0022	DK2	08	W	Q	O		5		-00	.005	.005	CB		K								U	A
SL08-0023	DK2	08	B	D	O		5		-00	.005		B								X		U	A
SL08-0024	DK2	08	B	D	O		2		-00	.005		B								X		U	P
SL08-0025	DK2	08	B		S		5		-00	.005		B								S		U	A
SL08-0026	DK2	08	B	U	U		1		-00	.005		B										U	P
SL08-0027	DK2	08	B	D	O		4		-00	.005		BG								S	X	U	P
SL08-0028	DK2	08	B	D	O		4		-00	.005		CB					C					U	A
SL08-0029	DK2	08	B	D	O		4		-00	.005		GB										U	P
SL08-0030	DK2	08	W	D	O		1		-00	.005	.009	CB										U	A
SL08-0031	DK2	08	B	D	O		3		-00	.005		C				5						U	A
SL08-0032	DK2	08	B	D	O		4		-00	.005		D										U	A
SL08-0033	DK2	08	W	D	O		3		-00	.005	.007	B										U	U
SL08-0034	DK2	08	B	U	U		1		-00	.005		CB										U	P
SL08-0035	DK2	08	U	U	U		U		-00	.005		CB										U	A
SL08-0036	DK2	08	B		S		4		-00	.005		L		KG								U	A
SL08-0037	DK2	08	B	U	U		U		-00	.005		C								S		U	A
SL08-0038	DK2	08	W	Q	O		5		-00	.005	.005	CB		G								U	A
SL08-0039	DK2	08	U	U	U		1		-00	.005		CB					C			X		U	P
SL08-0040	DK2	08	B		S		U		-00	.005		B										U	U
SL08-0041	DK2	08	B	U	U		U		-00	.005		CG										U	A
SL08-0042	DK2	08	B	U	U		U		-00	.005		CB										U	A
SL08-0043	DK2	08	W	D	O	W	5		-00	.005	.005	CB								X		U	A
SL08-0044	DK2	08	B	U	U		U		-00	.005		B										U	A
SL08-0045	DK2	08	B	U	U		U		+00	.008		W				7						U	U
SL08-0048	DK2	08	B	D	O		U		+00	.008		DG		KL						S		U	P
SL08-0047	DK2	08	B	U	U		U		+00	.008		CB										U	P
SL08-0048	DK2	08	W	D	O		2		+00	.008	.012	B	CB			U				X		U	P
SL08-0049	DK2	08	W		S		1		+00	.008	.015	B				C						U	U
SL08-0050	DK2	08	W	D	O		3	N	+00	.008	.011	CB		G		C						U	A
SL08-0051	DK2	08	B	D	O		3		+00	.008		B								S		U	P
SL08-0052	DK2	08	W		A		4		+00	.008	.009	B					C					U	A
SL08-0053	DK2	08	W	D	O		1		+00	.008	.015	CB	CG							S		U	P
SL08-0054	DK2	08	B	U	U		1		+00	.008		B				K				X		U	A
SL08-0055	DK2	08	B	U	U		1		+00	.008		DB								S		U	A
SL08-0056	DK2	08	B	D	O		3		+00	.008		BY										U	A
SL08-0057	DK2	08	W	D	O		1		+00	.008	.015	D								S		U	A
SL08-0058	DK2	08	U	U	U		U		+00	.008		CB				CD						U	A
SL08-0059	DK2	08	U	U	U		1		+00	.008		CB								X		U	A

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL08-0080	DK2	08	B	U	U		U		+00	.008		CB										U	P
SL08-0081	DK2	08	B	D	O	W	1		+00	.008		D								X		U	P
SL08-0082	DK2	08	B	D	O		4		+00	.008		D								X		U	P
SL08-0083	DK2	08	B	D	O		3		+00	.008		CB								X		U	P
SL08-0084	DK2	08	W	D	O		3	N	+00	.008	.011	CD										U	A
SL08-0085	DK2	08	W	D	O	W	3		+00	.008	.011	D								S		U	P
SL08-0086	DK2	08	B	D	O		1		+00	.008		CB				B				S		U	P
SL08-0087	DK2	08	W	D	O		3		+00	.008	.011	B				C				S		U	A
SL08-0088	DK2	08	B	D	O		3		+00	.008		B								S		U	A
SL08-0089	DK2	08	B	Q	O		2	N	+00	.008	.012	C										U	A
SL08-0070	DK2	08	B	U	U		1		+00	.008		B	CB									U	P
SL08-0071	DK2	08	B	D	O		5		+00	.008		D								X		U	P
SL08-0072	DK2	08	B	D	O		1		+00	.008		CB								S		U	P
SL08-0073	DK2	08	B	U	U		U		+00	.008		CB										U	A
SL08-0074	DK2	08	B	U	U		U		+00	.008		C								S		U	A
SL08-0075	DK2	08	W	D	O	W	4		+00	.008	.009	CB										U	A
SL08-0076	DK2	08	W	D	O	W	4		+0	.010	.012	D								S		U	P
SL08-0077	DK2	08	B	D	O		U		+0	.010		D								S		U	P
SL08-0078	DK2	08	W	D	O		3		+0	.010	.013	B								S		U	P
SL08-0079	DK2	08	B	D	O		U		+0	.010		D								X		U	P
SL08-0080	DK2	08	B	D	O		1		+0	.010		B				5						U	U
SL08-0081	DK2	08	B	U	U		U		+0	.010		B				C				S		U	U
SL08-0082	DK2	08	B	D	O		1		+0	.010		YB								S	X	U	P
SL08-0083	DK2	08	U	U	U		U		+0	.010		GB								X		U	P
SL08-0084	DK2	08	W	D	O		2		+0	.010	.015	B				7				X		U	P
SL08-0085	DK2	08	B	D	O		3	N	+0	.010		B	CB			C						U	P
SL08-0086	DK2	08	B	D	O		1		+0	.010		D				C				X		U	P
SL08-0087	DK2	08	B	U	U		U		+1	.012		CB				5				S	X	U	P
SL08-0088	DK2	08	W	D	O		3	N	+1	.012	.018	B								S		U	P
SL08-0089	DK2	08	B	U	U		1		+1	.012		B			L	N5				X		U	P
SL08-0090	DK2	08	B	D	O		4		+1	.012		C				5						U	P
SL08-0091	DK2	08	W	D	O		3		+1	.012	.018	DB				CK7				S		U	A
SL08-0092	DK2	08	B	D	O	C	U		+1	.012		B				H				X		U	P
SL08-0093	DK2	08	W	D	O		2	N	+1	.012	.018	B					C			X		U	P
SL08-0094	DK2	08	B	D	O		5		+1	.012		DB		L		7						U	A
SL08-0095	DK2	08	U	U	U		1		+1	.012		B				U						U	A
SL08-0098	DK2	08	B	D	O		3		+1	.012		B				5				X		U	P
SL08-0097	DK2	08	W	D	O		3	N	+1	.012	.016	B								X		U	P
SL08-0098	DK2	08	B	D	O		5		+1	.012		B	D							S	X	U	P
SL08-0099	DK2	08	B	D	O		4		+1	.012		B								S	X	U	P
SL08-0100	DK2	08	W	D	O		3		+1	.012	.018	C								S		U	A
SL08-0101	DK2	08	B		M		5		+1	.012		CB				I5				X		U	P
SL08-0102	DK2	08	B	U	U		1		+1	.012		DB								S	X	U	P
SL08-0103	DK2	08	B	D	O		3		+1	.012		D				C7				X		U	P
SL08-0104	DK2	08	W		M		3	N	+1	.012	.016	B										U	P
SL08-0105	DK2	08	W		A	M	5		+1	.012	.012	D				IY				X		U	A
SL08-0106	DK2	08	W	D	O		3	N	+1	.012	.016	B								X		U	A
SL08-0107	DK2	08	W		S		4		+2	.015	.018	DB				C				S		U	P
SL08-0108	DK2	08	B	U	U		U		+2	.015		DB								X		U	A
SL08-0109	DK2	08	B	U	U		U		+2	.015		B				H						U	A
SL08-0110	DK2	08	B	D	O	W	U		+2	.015		B	CB							X		U	P
SL08-0111	DK2	08	B	U	U		U		+2	.015		CB				H						U	A
SL08-0112	DK2	08	W	D	O		1		+2	.015	.027	GD		K								U	A
SL08-0113	DK2	08	B	U	U		U		+2	.015		GD								X		U	A
SL08-0114	DK2	08	B	U	U		1		+2	.015		B				U				X		U	P
SL08-0115	DK2	08	B	U	U		1		+2	.015		B								S	X	U	P
SL08-0118	DK2	08	W	D	O	W	5		+2	.015	.015	D	B	GK						X		U	U

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL08-0117	DK2	08	W		M		3		+2	.015	.020	CB										U	P
SL08-0118	DK2	08	B	U	U		1		+2	.015		B								S		U	P
SL08-0119	DK2	08	B	D	O	W	5		+2	.015		DB		KL								U	U
SL08-0120	DK2	08	B	D	O	W	4		+2	.015		B					W					U	U
SL08-0121	DK2	08	B	U	U		U		+2	.015		B	CB									U	A
SL08-0122	DK2	08	B	D	O		3		+3	.018		B										U	U
SL08-0123	DK2	08	B	D	O		3	N	+3	.018		CB										U	U
SL08-0124	DK2	08	W	D	O		2	N	+3	.018	.028	B				C						U	A
SL08-0125	DK2	08	B	U	U		U		+3	.018		AB										U	P
SL08-0126	DK2	08	B	D	O	W	3		+3	.018		BD				5				S	X	U	P
SL08-0127	DK2	08	W	D	O		1		+3	.018	.033	D				C				S		U	A
SL08-0128	DK2	08	B	D	O		5		+4	.023		B		K		5				S		U	P
SL08-0129	DK2	08	W	U	U		1		+4	.023	.042	CB										U	P
SL08-0130	DK2	08	B	D	O		5		+4	.023		CB		K								U	P
SL08-0131	DK2	08	W	D	O		1		+4	.023	.042	B	DB							X		U	P
SL08-0132	DK2	08	W		S		1		+4	.023	.042	B		K						X		U	P
SL08-0133	DK2	08	B	U	U		U		+4	.023		D								S		U	A
SL08-0134	DK2	08	B		A		U		+4	.023		DG								S		U	P
SL08-0135	DK2	08	B	D	O		4		+4	.023		BG				C5						U	U
SL08-0136	DK2	08	B	D	O		2		+4	.023		CB								S		U	P
SL08-0137	DK2	08	B	U	U		U		+4	.023		D				C						U	P
SL08-0138	DK2	08	B	D	O		4		+4	.023		B				C5						U	P
SL08-0139	DK2	08	W		M		4		+5	.029	.034	D				BC				X		U	P
SL08-0140	DK2	08	B		A		5		+5	.029		B								S		U	A
SL08-0141	DK2	08	B	U	U		1		+5	.029		BD										U	U
SL08-0142	DK2	08	B	U	U		1		+5	.029		CB										U	P
SL08-0143	DK2	08	W		A		3		+5	.029	.039	D										U	P
SL08-0144	DK2	08	W	D	O		2		+5	.029	.045	BG								S		U	P
SL08-0145	DK2	08	U	U	U		U		+8	.038		B				H						U	A
SL08-0146	DK2	08	B	D	O	W	5		+8	.038		B								S		U	A
SL08-0147	DK2	08	B	U	U		U		+8	.038		CB										U	U
SL08-0148	DK2	08	B	D	O		2		+8	.038		CB								X		U	A
SL08-0149	DK2	08	W		S		2		+8	.038	.058	DB										U	P
SL08-0150	DK2	08	W		M		3		+7	.052	.069	GD				H				X		U	A
SL08-0151	DK2	08	B	D	O		3		+7	.052		PB								X		U	U
SL08-0152	DK2	08	B		S		U		+7	.052		YB										U	A
SL08-0153	DK2	08	W	D	O	W	4		+7	.052	.061	DB				C						U	U
SL08-0154	DK2	08	B	D	O		U		+7	.052		DB								S		U	P
SL08-0155	DK2	08	W		S	C	3		+8	.088	.091	D	B			F7						U	P
SL08-0158	DK2	08	U	U	U		U		+8	.088		CB				N						U	P
SL08-0157	DK2	08	W		A	R	5		+8	.088	.088	D										U	A
SL08-0158	DK2	08	W		A		3		+9	.084	.112	DB				CI						U	A
SL08-0159	DK2	08	B		S		5		+9	.084		D		K		45				S		U	U
SL08-0160	DK2	08	B		A		5		+9	.084		B		L						S		U	P
SL08-0161	DK2	08	U	U	U		1		+9	.084		B										U	U
SL08-0162	DK2	08	B	U	U		1		+9	.084		B								S		U	A
SL08-0163	DK2	08	B		S	O	5		+10	.110		D	B	KL		5				X		U	P
SL08-0164	DK2	08	B		M		5		+10	.110		CB				I				S		U	P
SL08-0165	DK2	08	B	D	O		5		+11	.128		B		K		Y7				S		U	P
SL31-0001	DK3	31	W	D	O		5		+4	.019	.019	C		OSL						S		U	P
SL31-0002	DK3	31	W	F	O		1		+1	.013	.024	CB					O			S		E?	A
SL31-0003	DK3	31	W	D	O		4		+5	.034	.040	CB				BC	L			S		E?	P
SL31-0004	DK3	31	B	U	O		3		+00	.008		D				4				S		U	P
SL31-0005	DK3	31	W	D	O		1		-00	.008	.011	B				D7				S		U	A
SL31-0006	DK3	31	W	D	O		3	N	-00	.005	.007	CB										U	A
SL31-0007	DK3	31	B	U	U		1		-00	.005		B										U	U
SL31-0008	DK3	31	W	D	O		2		-00	.005	.008	B				J						U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL31-0009	DK3	31	B	U	U		2		-00	.005		B										U	P
SL31-0010	DK3	31	B	D	O		3		-00	.005		B	CB									U	P
SL31-0011	DK3	31	W	Q	O		2		-00	.005	.008	CB				K						U	P
SL31-0012	DK3	31	U	U	U		1		-00	.005		B										U	P
SL31-0013	DK3	31	B	D	O		3		-00	.005		B										U	P
SL31-0014	DK3	31	B	D	O		1		-00	.005		B										U	P
SL31-0015	DK3	31	B	D	O	W	3		-00	.005		D								S		U	P
SL31-0016	DK3	31	W	D	O		2		-00	.005	.008	B				C						U	P
SL31-0017	DK3	31	B	U	U		1		-00	.005		B				J				S		U	P
SL31-0018	DK3	31	U	U	U		1		-00	.005		B										U	P
SL31-0019	DK3	31	U	U	U		U		-00	.005		B								S		U	A
SL31-0020	DK3	31	B		M		4		-00	.005		B										U	U
SL31-0021	DK3	31	W	Q	O		4		-00	.005	.006	CB				I				X		U	P
SL31-0022	DK3	31	W	D	O		3		-00	.005	.007	DB	BD									U	P
SL31-0023	DK3	31	W	D	O		1		-00	.005	.009	B										U	P
SL31-0024	DK3	31	B		S		5		-00	.005		D										U	P
SL31-0025	DK3	31	W		S		1		-00	.005	.009	B	DB									U	P
SL31-0026	DK3	31	W	Q	O		3		-00	.005	.007	CB				C				S		U	P
SL31-0027	DK3	31	W		M		4		-00	.005	.006	B										U	P
SL31-0028	DK3	31	W	Q	O		4		-00	.005	.006	D								X		U	P
SL31-0029	DK3	31	W	D	O		3		-00	.005	.007	CB										U	A
SL31-0030	DK3	31	B	U	U		U		-00	.005		CB				J						U	A
SL31-0031	DK3	31	W	D	O		1		-00	.005	.009	CB										U	P
SL31-0032	DK3	31	W	D	O		1		-00	.005	.009	DB										U	P
SL31-0033	DK3	31	W	D	O	W	3	N	-00	.005	.007	C										U	P
SL31-0034	DK3	31	B	U	U		1		-00	.005		DB								S		U	A
SL31-0035	DK3	31	W	D	O		2		-00	.005	.008	B								X		U	P
SL31-0036	DK3	31	B	D	O		1		-00	.005		C										U	A
SL31-0037	DK3	31	W	D	O		1		-00	.005	.009	B										U	P
SL31-0038	DK3	31	B	D	O		4		-00	.005		CB				U						U	P
SL31-0039	DK3	31	W	D	O		4		-00	.005	.006	CB								X		U	P
SL31-0040	DK3	31	W	D	O	W	4		-00	.005	.008	C		L								U	A
SL31-0041	DK3	31	W	Q	O		3	N	-00	.005	.007	CB										U	A
SL31-0042	DK3	31	B	D	O		1		-00	.005		D								S		U	A
SL31-0043	DK3	31	U		S		1		-00	.005		B										U	P
SL31-0044	DK3	31	B	D	O	W	4		-00	.005		CB										U	P
SL31-0045	DK3	31	W	D	O		2		-00	.005	.008	B								S		U	P
SL31-0046	DK3	31	B	D	O		2		-00	.005		B										U	P
SL31-0047	DK3	31	U	U	U		U		-00	.005		CB										U	P
SL31-0048	DK3	31	W	D	O		5		-00	.005	.005	B										U	U
SL31-0049	DK3	31	W	D	O		2		-00	.005	.008	DB		L						S		U	P
SL31-0050	DK3	31	W	D	O		4		-00	.005	.006	B										U	P
SL31-0051	DK3	31	B	D	O		2	N	-00	.005		C				BJ						U	P
SL31-0052	DK3	31	B	U	U		U		-00	.005		B										U	A
SL31-0053	DK3	31	B		S		1		-00	.005		CB										U	P
SL31-0054	DK3	31	W	D	O		3		-00	.005	.007	B								S		U	P
SL31-0055	DK3	31	B	D	O		1		-00	.005		B	CB									U	P
SL31-0056	DK3	31	B	D	O		2		-00	.005		GB								S		U	A
SL31-0057	DK3	31	U	D	O		5		-00	.005		D								X		U	P
SL31-0058	DK3	31	B	D	O		1		-00	.005		DB								S		U	A
SL31-0059	DK3	31	W	D	O		3	N	-00	.005	.007	CB										U	P
SL31-0060	DK3	31	W	D	O		4		-00	.005	.008	B				U						U	P
SL31-0061	DK3	31	W	D	O		5		-00	.005	.005	CB				C						U	P
SL31-0062	DK3	31	W	D	O		1		-00	.005	.009	C										U	A
SL31-0063	DK3	31	B	U	U		U		-00	.005		B										U	P
SL31-0064	DK3	31	B	U	O		3		-00	.005		B										U	P
SL31-0065	DK3	31	B		S		4		-00	.005		B	CB									U	A
												B	CB									U	U

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	ZD
SL31-0066	DK3	31	B	D	O		3		-00	.005		B				C						U	A
SL31-0067	DK3	31	W	D	O		1		-00	.005	.009	B										U	P
SL31-0068	DK3	31	B		S		1		-00	.005		GD										U	P
SL31-0069	DK3	31	W	D	O		1		-00	.005	.009	DB										U	P
SL31-0070	DK3	31	W	D	O	W	3		-00	.005	.007	BD										U	P
SL31-0071	DK3	31	B		M		3		-00	.005		GB								X		U	P
SL31-0072	DK3	31	B	D	O		1		-00	.005		B								X		U	P
SL31-0073	DK3	31	B	U	U		U		-00	.005		B				U						U	P
SL31-0074	DK3	31	W		S		5		-00	.005	.005	B										U	P
SL31-0075	DK3	31	W	D	O		2		-00	.005	.008	CB										U	U
SL31-0076	DK3	31	B	U	U		1		-00	.005		CB										U	P
SL31-0077	DK3	31	U	U	U		U		-00	.005		B				H						U	A
SL31-0078	DK3	31	B		S		4		-00	.005		B										U	U
SL31-0079	DK3	31	W	D	O		3	N	-00	.005	.007	DB										U	U
SL31-0080	DK3	31	W	D	O		2		-00	.005	.008	B				CD						U	F
SL31-0081	DK3	31	W		M		5		-00	.005	.005	DB				I						U	P
SL31-0082	DK3	31	W	U	U		1		-00	.005	.009	D										U	A
SL31-0083	DK3	31	B	U	U		U		-00	.005		CB										U	U
SL31-0084	DK3	31	B	D	O		3		-00	.005		CB										U	A
SL31-0085	DK3	31	B	U	U		U		-00	.005		B										U	A
SL31-0086	DK3	31	B	D	O		1		-00	.005		CB				5						U	P
SL31-0087	DK3	31	B	U	U		1		-00	.005		B										U	A
SL31-0088	DK3	31	W		A		5		-00	.005	.005	B	B									U	P
SL31-0089	DK3	31	B	D	O		1		-00	.005		GB								X		U	A
SL31-0090	DK3	31	W	D	O		3		-00	.005	.007	B				C						U	A
SL31-0091	DK3	31	B	U	U		U		-00	.005		B								S		U	A
SL31-0092	DK3	31	W	D	O		3		-00	.005	.007	B										U	U
SL31-0093	DK3	31	B	U	U		U		-00	.005		B	D							S		U	P
SL31-0094	DK3	31	B	D	O		3		-00	.005		C										U	A
SL31-0095	DK3	31	W	D	O		2	N	-00	.005	.008	B		I		C						U	P
SL31-0096	DK3	31	W		S		2		+00	.008	.008	BD				C						U	P
SL31-0097	DK3	31	W	D	O		2		+00	.008	.008	B								X		U	P
SL31-0098	DK3	31	B	D	O		3		+00	.008		B				5				X		U	P
SL31-0099	DK3	31	W		A		3		+00	.008	.011	BD				I						U	P
SL31-0100	DK3	31	B	D	O		1		+00	.008						5				X		U	P
SL31-0101	DK3	31	U	D	O		2		+00	.008		B										U	P
SL31-0102	DK3	31	U	D	O		1		+00	.008		GB										U	P
SL31-0103	DK3	31	W		S		2		+00	.008	.012	GB										U	A
SL31-0104	DK3	31	W		S		5		+00	.008	.008	B	D	I								U	P
SL31-0105	DK3	31	W	D	O	W	4		+00	.008	.008	B								S		U	P
SL31-0106	DK3	31	B	D	O		3		+00	.008		DB								X		U	P
SL31-0107	DK3	31	U	U	U		U		+00	.008		DB		L								U	P
SL31-0108	DK3	31	W	D	O		4		+00	.008	.009	B								S		U	P
SL31-0109	DK3	31	B	U	U		1		+00	.008		B				6				S		U	A
SL31-0110	DK3	31	B	U	U		1		+00	.008		B										U	A
SL31-0111	DK3	31	W	D	O		1		+00	.008	.015	B										U	P
SL31-0112	DK3	31	W	D	O		1		+00	.008	.015	B										U	P
SL31-0113	DK3	31	U	U	U		U		+00	.008		B										U	A
SL31-0114	DK3	31	U		A		4		+00	.008		B										U	P
SL31-0115	DK3	31	B	D	O		1		+00	.008		B				5				S		U	P
SL31-0116	DK3	31	B	D	O		3		+00	.008		B				C						U	P
SL31-0117	DK3	31	B	U	U		1		+00	.008		B										U	P
SL31-0118	DK3	31	B	D	O		1		+00	.008		D				U						U	P
SL31-0119	DK3	31	B	D	O		3		+00	.008		B										U	P
SL31-0120	DK3	31	W	D	O		1		+00	.008	.015	B				5	C			S		U	P
SL31-0121	DK3	31	W	D	O		1		+00	.008	.015	B								S		U	P
SL31-0122	DK3	31	W	Q	O		2		+00	.008	.012	B				JK						U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0002	DK5	56	B	D	O	W	5		+5	.029		D		G								U	A
SL56-0003	DK5	56	W	Q	O		4		+10	.110	.129	A		L		BC				S	X	U	P
SL56-0004	DK5	56	W	D	O		4		+6	.038	.045	D		G		C						U	A
SL56-0005	DK5	56	B	U	U		U		+5	.029		D		G		C						U	A
SL56-0006	DK5	56	W		M		5		+6	.038	.038	CD		KNG		AI						E?	A
SL56-0007	DK5	56	B	U	U		U		+10	.110		DB		KG		A45				S		E?	P
SL56-0008	DK5	56	W		S		U		+11	.128		CD		KLNG		A						E?	U
SL56-0009	DK5	56	W	D	O		3		+1	.012	.016	CB				C				S		U	P
SL56-0010	DK5	56	W	F	O		4		+00	.008	.009	CD				B				S		U	A
SL56-0011	DK5	56	W		A		5		U			D		NG		A				X		E?	P
SL56-0012	DK5	56	B		S		5		U			CD		KLG		C						E?	A
SL56-0013	DK5	56	B	D	O		5		+11	.128		CD				C456				S		U	P
SL56-0014	DK5	56	B	U	O	W	5		+11	.128		CD				CD				S	X	U	P
SL56-0015	DK5	56	B		S		3		+11	.126		CB				CN	O			S		E?	P
SL56-0016	DK5	56	B		A		3		+11	.128		B				BC				S		U	P
SL56-0017	DK5	56	W	D	O	W	2		+11	.128	.200	CB				N				S		U	P
SL56-0018	DK5	56	B	U	O	W	3		+9	.084		CD				CN456				S		U	P
SL56-0019	DK5	56	B	U	O	W	3		+9	.084		DB		L		CN5				S		U	P
SL56-0020	DK5	56	B		M		3		+9	.084		CB				BC				S		U	P
SL56-0021	DK5	56	B	U	O		2		+9	.084		CD				N				S		U	P
SL56-0022	DK5	56	W	F	O		1		+9	.084	.153	C				N				X		U	A
SL56-0023	DK5	56	W	D	O	W	5		+8	.068	.068	DB		G		A						U	P
SL56-0024	DK5	56	W	D	O		4		+8	.068	.080	A				C				S		U	A
SL56-0025	DK5	56	W	D	O	W	5		+8	.068	.068	CB		KL		C						U	P
SL56-0026	DK5	56	B		M		3		+8	.068		CB				I5				S		U	P
SL56-0027	DK5	56	B	U	O	R	U		+8	.068		B		KL						X		U	P
SL56-0028	DK5	56	B	U	O	R	1		+8	.068		B	CB			N45				S		U	A
SL56-0029	DK5	56	W	F	O		5		+8	.068	.068	CB		L		C	C			S		U	P
SL56-0030	DK5	56	B	U	O	W	5		+8	.088		DB		L		C				S		U	P
SL56-0031	DK5	56	W		S		5		+8	.068	.068	D		LG		AC						U	P
SL56-0032	DK5	56	B	U	O		3		+8	.088		CB				45				S		U	P
SL56-0033	DK5	56	B	U	O		1		+8	.068		CD								S		U	P
SL56-0034	DK5	56	B		A		U		+7	.052		B		L		C				X		U	P
SL56-0035	DK5	56	W	D	O		1		+7	.052	.094	B				HN				X		U	A
SL56-0036	DK5	56	B	U	O		3		+7	.052		B				N45				S		U	P
SL56-0037	DK5	56	B	U	U		1		+7	.052		B				N6				X		U	P
SL56-0038	DK5	56	B	U	O	W	5		+7	.052		D		KLG								U	A
SL56-0039	DK5	56	B		S		5		+7	.052		D		KLG								U	P
SL56-0040	DK5	56	W	D	O	W	3		+7	.052	.069	CD		L		CD6	O			S		E?	P
SL56-0041	DK5	56	B	U	O		2		+7	.052		B				C				X	S	U	P
SL56-0042	DK5	56	B	U	O	W	5		+7	.052		AB		LG		C						U	P
SL56-0043	DK5	56	W	D	O	W	5		+7	.052	.052	CB		L						S		U	A
SL56-0044	DK5	56	B	U	O	W	5		+7	.052		BD		L		A				X		U	P
SL56-0045	DK5	56	B		M		3		+7	.052		CB				BCN				S		U	P
SL56-0046	DK5	56	W	D	O	W	5		+7	.052	.052	D		LG						X		U	P
SL56-0047	DK5	56	W		S		5		+7	.052	.052	CB				ACI				X		U	A
SL56-0048	DK5	56	W	D	O	W	3		+7	.052	.068	B		L		B				S		U	A
SL56-0049	DK5	56	B	U	O		1		+7	.052		B				N				S		U	P
SL56-0050	DK5	56	B	D	O		2		+7	.052		CD				N				S		U	P
SL56-0051	DK5	56	B	U	O	W	5		+7	.052		BD		G		A						U	P
SL56-0052	DK5	56	W	D	O	W	4		+7	.052	.061	B		N		CD						U	A
SL56-0053	DK5	56	B		S		4		+7	.052		B										U	P
SL56-0054	DK5	56	B	U	O	W	5		+7	.052		D		LG								U	P
SL56-0055	DK5	56	W	D	O		4		+8	.038	.045	CG				B						U	P
SL56-0056	DK5	56	B	U	O	W	5		+6	.038		DB				C				X		U	A
SL56-0057	DK5	56	W	D	O	W	4		+6	.038	.045	CB								X		U	P
SL56-0058	DK5	56	B	D	O		3		+6	.038		BD				C				S		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0059	DK5	56	B	U	O		1		+6	.038		B				FH6				S		U	P
SL56-0060	DK5	56	B	U	O	W	5		+6	.038		C				AC						U	A
SL56-0061	DK5	56	B	D	O	W	3		+6	.038		BD				BC				S		U	P
SL56-0062	DK5	56	B	U	O		3		+6	.038		B	CB			C				X		U	P
SL56-0063	DK5	56	W	D	O	W	5		+8	.038	.038	BD		KLG								U	A
SL56-0064	DK5	56	B	U	O	W	5		+6	.038		DB		G		C				X		U	P
SL56-0065	DK5	56	B	U	O		1		+6	.038		B				CY6				S		U	P
SL56-0066	DK5	56	W		S		5		+6	.038	.038	D		NG		A						U	A
SL56-0067	DK5	56	B	U	O		5		+6	.038		B		KL						S		U	A
SL56-0068	DK5	56	B	U	O	W	5		+6	.038		D		G						S		U	P
SL56-0069	DK5	56	B	U	O		2		+8	.038		CB								S		U	P
SL56-0070	DK5	56	B	U	O		2		+8	.038		B				C				X		U	P
SL56-0071	DK5	56	B	U	C		U		+6	.038		CB				F				X		U	P
SL56-0072	DK5	56	B	U	O		1		+6	.038		B				5				S		U	P
SL56-0073	DK5	56	B	U	O	W	3		+6	.038		B				B				S		U	P
SL56-0074	DK5	56	B	U	O	W	5		+8	.038		CB				C				S		U	P
SL56-0075	DK5	56	B	U	O		1		+6	.038		GB				C				S		U	P
SL56-0076	DK5	56	W	D	O		3		+6	.038	.051	CB				C				X		U	P
SL56-0077	DK5	56	B	D	O		2		+6	.038		CB				CN5				S		U	P
SL56-0078	DK5	56	B	U	O		2		+6	.038		PB				C6				S		U	P
SL56-0079	DK5	56	W	D	O	W	5		+8	.038	.038	D		LNG								U	P
SL56-0080	DK5	56	B		A		3		+8	.038		B				C				X		U	P
SL56-0081	DK5	56	B	U	O	W	4		+6	.038		C										U	P
SL56-0082	DK5	56	B	U	O	W	4		+8	.038		B				CD				S		U	P
SL56-0083	DK5	56	B	U	O	W	5		+6	.038		B	DB	LNG		C						E?	A
SL56-0084	DK5	56	B		S		5		+6	.038		DB		K		C				X		U	P
SL56-0085	DK5	56	W		S		5		+8	.038	.038	B	CB	N		C				S		U	P
SL56-0086	DK5	56	B	U	O		3		+5	.029		B								S		U	A
SL56-0087	DK5	56	B	U	O	W	5		+5	.029		CB	B							X		U	A
SL56-0088	DK5	56	B	U	O	W	5		+5	.029		BD				A				X		U	P
SL56-0089	DK5	56	B	U	O		1		+5	.029		CB				N				X		U	A
SL56-0090	DK5	56	B	U	O		1		+5	.029		B				N				X		U	A
SL56-0091	DK5	56	W	D	O	W	5		+5	.029	.029	B	CB	S		CA				S		U	P
SL56-0092	DK5	56	B	U	O	W	5		+5	.029		B				C				S		U	P
SL56-0093	DK5	56	B		A		3		+5	.029		DB								X		U	P
SL56-0094	DK5	56	B	U	O		1		+5	.029		B										U	A
SL56-0095	DK5	56	W		S	R	5		+5	.029	.029	DB		LNG		A						U	P
SL56-0096	DK5	56	W	D	O	W	5		+5	.029	.029	D		LNG		A				X		U	A
SL56-0097	DK5	56	W	D	O	W	4		+5	.029	.034	D		LNG								U	A
SL56-0098	DK5	56	B	U	O	W	5		+5	.029		B				C6				X		U	P
SL56-0099	DK5	56	B	U	O	R	5		+5	.029		B				C				X		U	P
SL56-0100	DK5	56	B	U	O	W	1		+5	.029		D				N6				S		U	P
SL56-0101	DK5	56	W		S		3		+5	.029	.037	CB	B			BC				S		U	P
SL56-0102	DK5	56	B	U	O	W	4		+5	.029		CB				C				S	X	U	A
SL56-0103	DK5	56	B	D	O		4		+5	.029		DB				CD				S		U	P
SL56-0104	DK5	56	B	U	O		3		+5	.029		CB	B			BN46	C			S		U	A
SL56-0105	DK5	56	B	U	O		1		+5	.029		CB				N456				X		U	P
SL56-0106	DK5	56	W		S	M	4		+5	.029	.034	CB				CI				X		U	A
SL56-0107	DK5	56	B		A		1		+5	.029		B								X		U	P
SL56-0108	DK5	56	B	U	O		5		+4	.023		CB				C456	C			S		U	P
SL56-0109	DK5	56	B		A		1		+4	.023		CB				F				S		U	P
SL56-0110	DK5	56	B	U	U		1		+4	.023		CB				N				S		U	A
SL56-0111	DK5	56	W		S		4		+4	.023	.027	B			L	BC						U	A
SL56-0112	DK5	56	B	U	U		U		+4	.023		CB		N		C						U	A
SL56-0113	DK5	56	B	D	O		3		+4	.023		B				BC				S		U	P
SL56-0114	DK5	56	B		S		4		+4	.023		BD		L		C				S		U	P
SL56-0115	DK5	56	B	U	O		5		+4	.023		B		L		C				S	X	U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0116	DK5	56	B	U	O		4		+4	.023		B				C				S		U	P
SL56-0117	DK5	56	B	U	O	W	2		+4	.023		BD				CJ				X		U	P
SL56-0118	DK5	56	B	U	O	C	4		+4	.023		B				CF				X		U	P
SL56-0119	DK5	56	W	D	O		3		+4	.023	.031	B		N		B				S		U	P
SL56-0120	DK5	56	B	U	O	C	4		+4	.023		DB				CF6				S		U	P
SL56-0121	DK5	56	W	D	O	W	5		+4	.023	.023	CD		L		C				S		U	P
SL56-0122	DK5	56	B	U	O	W	5		+4	.023		BD										U	P
SL56-0123	DK5	56	W	F	O		3		+4	.023	.031	CB		N		CN				S		U	P
SL56-0124	DK5	56	W	D	O	W	5		+4	.023	.023	CD		LNG						S	X	U	A
SL56-0125	DK5	56	W	F	O		3		+4	.023	.031	CB	B			BC				X	S	U	P
SL56-0126	DK5	56	B	U	O		2		+4	.023		CB				N6						U	P
SL56-0127	DK5	56	W	D	O	W	2		+4	.023	.035	B			L	CN				S		U	P
SL56-0128	DK5	56	B	U	O		5		+4	.023		BD		L		C5				S		U	P
SL56-0129	DK5	56	W	D	O		3	N	+4	.023	.031	CB				C				S		U	A
SL56-0130	DK5	56	W	D	O		1		+4	.023	.042	A				N						U	A
SL56-0131	DK5	56	B	U	O		3	N	+4	.023		D				CN5				S		U	P
SL56-0132	DK5	56	B		M		U		+4	.023		BD				I				S		U	P
SL56-0133	DK5	56	B	U	O		1		+4	.023		CB				C46				S		U	A
SL56-0134	DK5	56	W	D	C	O	1		+3	.018	.033	BD				FH				X		U	P
SL56-0135	DK5	56	B		S		5		+3	.018		D		NG		A						U	A
SL56-0136	DK5	56	W	D	O	W	1		+3	.018	.033	D	B			N				S		U	A
SL56-0137	DK5	56	W		M		5		+3	.018	.018	DB				CDI				S		U	P
SL56-0138	DK5	56	U		A		U		+3	.018		B		N		C						U	U
SL56-0139	DK5	56	W	D	O	W	3		+3	.018	.024	CD				BCN	C			S		U	A
SL56-0140	DK5	56	B		M		5		+3	.018		CB				AI						U	A
SL56-0141	DK5	56	W	D	O		5		+3	.018	.018	YB				CD				S		U	P
SL56-0142	DK5	56	W	D	O	W	5		+3	.018	.018	D		LNG		AC						U	A
SL56-0143	DK5	56	B	U	O	W	5		+3	.018		CD								X		U	P
SL56-0144	DK5	56	W		S		2		+3	.018	.028	B				C				S		U	P
SL56-0145	DK5	56	B	U	O		2		+3	.018		BG				N56				X		U	P
SL56-0148	DK5	56	W		S		4		+3	.018	.021	BD				CD				S		U	P
SL56-0147	DK5	56	B	U	O	W	5		+3	.018		D		OLNG						S		U	A
SL56-0148	DK5	56	W	D	O	W	4		+3	.018	.021	BD				C						U	A
SL56-0149	DK5	56	W	D	O		3		+3	.018	.024	DB				CJN				S		U	P
SL56-0150	DK5	56	B	U	O		3		+3	.018		CD				N458				S		U	P
SL56-0151	DK5	56	B	U	O		2		+3	.018		CB				4				S		U	P
SL56-0152	DK5	56	B	U	O		4		+3	.018		C				B5				S		U	P
SL56-0153	DK5	56	W	D	O		3		+3	.018	.024	AB								S		U	A
SL56-0154	DK5	56	B		S		1		+3	.018		DB				H				S		U	P
SL56-0155	DK5	56	W	F	O	W	4		+3	.018	.021	B				C				S		U	P
SL56-0156	DK5	56	W	D	O		3		+3	.018	.024	CB								S		U	P
SL56-0157	DK5	56	W	D	O	W	5		+3	.018	.018	D		G		A				X		U	P
SL56-0158	DK5	56	W	D	O	W	3	N	+3	.018	.024	B		K						S		U	P
SL56-0159	DK5	56	W		M		4		+3	.018	.021	C		L		C				S		U	P
SL56-0160	DK5	56	B		M		5		+3	.018		C				CD				S		U	A
SL56-0161	DK5	56	B		S		U		+3	.018		B				C						U	A
SL56-0162	DK5	56	W	D	O	W	3		+3	.018	.024	B								S		U	P
SL56-0163	DK5	56	W		S		5		+3	.018	.018	CB				BCD				S		U	P
SL56-0164	DK5	56	B	U	O		5		+3	.018		CB				C				S		U	P
SL56-0165	DK5	56	W		M		5		+3	.018	.018	CB				CI				S		U	A
SL56-0166	DK5	56	B	U	O	W	5		+3	.018		D		G		A						U	A
SL56-0167	DK5	56	B	U	O	W	4		+3	.018		C				C4						U	A
SL56-0168	DK5	56	B	U	O	W	5		+3	.018		DB				C				S		U	A
SL56-0169	DK5	56	B	U	O	W	2		+3	.018		CB				C6				S		U	P
SL56-0170	DK5	56	W	D	O	W	5		+3	.018	.018	B				A				S		U	P
SL56-0171	DK5	56	B		S		4		+3	.018		DB	B			CD5				S		U	P
SL56-0172	DK5	56	B	U	O		3		+3	.018		CB				CD56				S		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0173	DK5	56	B	U	O		4		+3	.018		CB				CD				S		U	P
SL56-0174	DK5	56	B	U	O		3		+3	.018		CB				BCF56				S		U	P
SL56-0175	DK5	56	B	U	O		1		+3	.018		CB				N6				X		U	A
SL56-0176	DK5	56	B	U	O		1		+3	.018		CB				FN6				X		U	P
SL56-0177	DK5	56	W		S		2		+3	.018	.028	B	CB			C				S		U	P
SL56-0178	DK5	56	B	U	O	W	4		+3	.018		CB				A						U	A
SL56-0179	DK5	56	B	U	O	C	1		+3	.018		CB				CF6				S		U	A
SL56-0180	DK5	56	W		S		4		+2	.015	.018	DB		I		BC				S		U	P
SL56-0181	DK5	56	W	D	O	C	1		+2	.015	.027	CD				CHY				S		U	A
SL56-0182	DK5	56	B	U	O	W	5		+2	.015		CB		KL		A5						U	P
SL56-0183	DK5	56	B	U	O	W	5		+2	.015		B				C56				S		U	P
SL56-0184	DK5	56	W	D	O	C	2		+2	.015	.023	CB				CFN				S		U	A
SL56-0185	DK5	56	W		S		4		+2	.015	.018	CB				CDN	O			S		E?	P
SL56-0186	DK5	56	B	U	O		1		+2	.015		B				456				S		U	P
SL56-0187	DK5	56	B	U	O	W	5		+2	.015		B		N		C5				X		U	A
SL56-0188	DK5	56	W	D	O		4		+2	.015	.018	CD				B				S		U	A
SL56-0189	DK5	56	W		S		4		+2	.015	.018	CD				C						U	A
SL56-0190	DK5	56	W	D	O		4		+2	.015	.018	B				B						U	P
SL56-0191	DK5	56	B	D	O	W	3		+2	.015		B		I		CJ				S		U	P
SL56-0192	DK5	56	B	U	O		1		+2	.015		B				D						U	P
SL56-0193	DK5	56	W	D	O	W	1		+2	.015	.027	B				N				S		U	P
SL56-0194	DK5	56	B	D	O	W	5		+2	.015		YB		L		C						U	P
SL56-0195	DK5	56	B	D	O		2		+2	.015		B				CN				X		U	P
SL56-0196	DK5	56	W	F	O		1		+2	.015	.027	YB				N						U	A
SL56-0197	DK5	56	B	D	O		5		+2	.015		CD				C456				X		U	P
SL56-0198	DK5	56	B	U	O		4		+2	.015		B				CD						U	P
SL56-0199	DK5	56	W	D	O	C	1		+2	.015	.027	CB				HN				X		U	P
SL56-0200	DK5	56	W	D	O		5		+2	.015	.015	CB		L		AC				S		U	P
SL56-0201	DK5	56	W	D	O		1		+2	.015	.027	B	CB			CN						U	P
SL56-0202	DK5	56	W	D	O	W	2		+2	.015	.023	D				CN				S		U	P
SL56-0203	DK5	56	B	D	O	W	4		+2	.015		CB				C						U	A
SL56-0204	DK5	56	B	U	O		3		+2	.015		B								S		U	P
SL56-0205	DK5	56	B	U	O		1		+2	.015		B				N456						U	A
SL56-0206	DK5	56	W	F	O		5		+2	.015	.015	CB		L		C				S		U	P
SL56-0207	DK5	56	B	U	O		4		+2	.015		YB				45						U	P
SL56-0208	DK5	56	W		A		5		+2	.015	.015	B		LG						S		U	P
SL56-0209	DK5	56	W	D	O		1		+2	.015	.027	B				N				X		U	P
SL56-0210	DK5	56	B		S		2		+2	.015		B				CN				S		U	P
SL56-0211	DK5	56	W		S		4		+2	.015	.018	CB		L		C				X		U	P
SL56-0212	DK5	56	B	U	O	W	4		+2	.015		B	CB			BC6						U	A
SL56-0213	DK5	56	W	D	O	W	5		+2	.015	.015	DB		LG		A						U	A
SL56-0214	DK5	56	W	D	O		1		+2	.015	.027	B				N				X		U	P
SL56-0215	DK5	56	B		M		1		+2	.015		CB				FI6				S		U	P
SL56-0216	DK5	56	B	U	O		3		+2	.015		CB				CN				X		U	P
SL56-0217	DK5	56	B	U	O		1		+2	.015		DB			L					X		U	P
SL56-0218	DK5	56	B	U	O		3		+2	.015		CB		L		CN						U	P
SL56-0219	DK5	56	B		S		2		+2	.015		DB				5						U	P
SL56-0220	DK5	56	B	U	O		1		+2	.015		B								X		U	P
SL56-0221	DK5	56	W	F	O		5		+1	.012	.012	B		L		C				S		U	P
SL56-0222	DK5	56	B	D	O		5		+1	.012		DB		KL		C				X		U	P
SL56-0223	DK5	56	B		A		5		+1	.012		B				C				X		U	P
SL56-0224	DK5	56	W		S		3		+1	.012	.016	B				B				S		U	P
SL56-0225	DK5	56	W	D	O		3		+1	.012	.016	CB				CJ				S		U	P
SL56-0226	DK5	56	B	U	O		2		+1	.012		CB			L	C6						U	P
SL56-0227	DK5	56	B	U	O		3		+1	.012		B	CB			N5						U	P
SL56-0228	DK5	56	B	U	O		3		+1	.012		CB				CH6	C			S		U	P
SL56-0229	DK5	56	B	D	O		3		+1	.012		B				N				X		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0230	DK5	56	B	U	O		3		+1	.012		B				BCN56				S		U	P
SL56-0231	DK5	56	B	U	O	W	5		+1	.012		CB				CN				S		U	P
SL56-0232	DK5	56	W	F	O		5		+1	.012	.012	C		L								U	A
SL56-0233	DK5	56	W		S	O	4		+1	.012	.014	CD			L	CN				X		U	P
SL56-0234	DK5	56	W	D	O		3		+1	.012	.016	B				CN				S		U	P
SL56-0235	DK5	56	W		M		3		+1	.012	.016	P				N						U	A
SL56-0236	DK5	56	W	D	O		3		+1	.012	.016	DB				C				S		U	P
SL56-0237	DK5	56	B	U	O		3		+1	.012		B				C				X		U	P
SL56-0238	DK5	56	W	D	O		5		+1	.012	.012	CB		L		C				S		U	A
SL56-0239	DK5	56	W		M		5		+1	.012	.012	CD		L		CI						U	A
SL56-0240	DK5	56	W	D	O	C	3		+1	.012	.016	B				F				X		U	P
SL56-0241	DK5	56	W	D	O	C	1		+1	.012	.022	B				CF				X		U	A
SL56-0242	DK5	56	B	U	O		3		+1	.012		CB				BC						U	A
SL56-0243	DK5	56	B		S		1		+1	.012		CD				N4				S		U	P
SL56-0244	DK5	56	B		S		4		+1	.012		YB				C				S		U	P
SL56-0245	DK5	56	W	D	O		2		+1	.012	.018	B				C						U	A
SL56-0246	DK5	56	U	U	O	W	3		+1	.012		CD				CD				X		U	P
SL56-0247	DK5	56	B	U	O		4		+1	.012		CB		N		C						U	A
SL56-0248	DK5	56	B	U	O		5		+1	.012		BD		LN						S		U	P
SL56-0249	DK5	56	B		S		3		+1	.012		BD				CD				S		U	P
SL56-0250	DK5	56	B	F	O		3		+1	.012		CB				BCN						U	A
SL56-0251	DK5	56	W	D	O		3	N	+1	.012	.016	B		L		C				X		U	P
SL56-0252	DK5	56	W	D	O		5		+1	.012	.012	B		L		C				X		U	P
SL56-0253	DK5	56	B	U	O		4		+1	.012		YB				CN				S		U	P
SL56-0254	DK5	56	B	U	O		3		+1	.012		CD				CN56				X		U	P
SL56-0255	DK5	56	B	D	O		5		+1	.012		B		LN		5				S		U	P
SL56-0256	DK5	56	B	U	O	W	5		+1	.012		B		L		45				S	X	U	P
SL56-0257	DK5	56	B	U	O		3		+1	.012		B				N				X		U	P
SL56-0258	DK5	56	B	U	O	W	4		+1	.012		B		L		C8				S	X	U	P
SL56-0259	DK5	56	B	U	O		5		+1	.012		DB		LNG		C						U	A
SL56-0260	DK5	56	W		A		3		+1	.012	.016	B				J				X		U	P
SL56-0261	DK5	56	B	U	O	W	5		+1	.012		CB				56				S		U	P
SL56-0262	DK5	56	B		S		3		+1	.012		B	C			C				S		U	P
SL56-0263	DK5	56	W		S		1		+1	.012	.022	B			L	C				S		U	A
SL56-0264	DK5	56	B	U	O		1		+1	.012		CB				N				S		U	P
SL56-0265	DK5	56	B	U	O		4		+1	.012		B		L		C				S		U	A
SL56-0266	DK5	56	B	U	O		1		+1	.012		CD				CN				X		U	P
SL56-0267	DK5	56	B		S		3		+1	.012		BD				N				S		U	P
SL56-0268	DK5	56	W		S		5		+1	.012	.012	D	CD	LG		A				X		U	A
SL56-0269	DK5	56	B	U	O		2	N	+1	.012		CB				C				S		U	A
SL56-0270	DK5	56	B	U	O		1		+1	.012		B		N		N				X		U	P
SL56-0271	DK5	56	B	U	U		U		+1	.012		B				CP				X		U	P
SL56-0272	DK5	56	B	U	O		1		+1	.012		B				N456				X		U	P
SL56-0273	DK5	56	B	U	O	W	2		+1	.012		B				FN56				X		U	P
SL56-0274	DK5	56	B	U	O	W	4		+0	.010		B		L		C						U	A
SL56-0275	DK5	56	B	U	O		3		+0	.010		B				C						U	A
SL56-0276	DK5	56	W		M		3		+0	.010	.013	CD	B			BIK						U	P
SL56-0277	DK5	56	W		S		2		+0	.010	.015	D				B				S		U	P
SL56-0278	DK5	56	W	D	O	W	5		+0	.010	.010	CB		N		A						U	A
SL56-0279	DK5	56	B	U	O		3		+0	.010		B				C5				S		U	P
SL56-0280	DK5	56	W	Q	O		3		+0	.010	.013	DB				B						U	P
SL56-0281	DK5	56	B		U		2		+0	.010		B			L							U	A
SL56-0282	DK5	56	B		S		2		+0	.010		CD				C						U	P
SL56-0283	DK5	56	B		S		4		+0	.010		B				B				S		U	P
SL56-0284	DK5	56	W		S		3		+0	.010	.013	B	BD			C				S		U	P
SL56-0285	DK5	56	W	D	O		1		+0	.010	.018	CB		I								U	A
SL56-0286	DK5	56	B	U	O		1		+0	.010		GB				K6						U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0287	DK5	56	W	D	O		5		+0	.010	.010	B		L		C				S		U	A
SL56-0288	DK5	56	W		M		3		+0	.010	.013	DB				CIK				S		U	P
SL56-0289	DK5	56	B	U	O		4		+0	.010		DB		L		C5				S		U	P
SL56-0290	DK5	56	W	D	O	W	3		+0	.010	.013	CB				N6						U	A
SL56-0291	DK5	56	B	U	O	W	4		+0	.010		BD				C				X		U	P
SL56-0292	DK5	56	B	U	O		3		+0	.010		B				B						U	P
SL56-0293	DK5	56	B	U	O		3		+0	.010		B				BCD						U	A
SL56-0294	DK5	56	B		M		5		+0	.010		CB		L		I						U	P
SL56-0295	DK5	56	W	D	U		1		+0	.010	.018	C				N						U	A
SL56-0296	DK5	56	B	U	U		1		+0	.010		B				6				X		U	P
SL56-0297	DK5	56	B	U	O	W	4		+0	.010		DB										U	P
SL56-0298	DK5	56	B		M		3		+0	.010		DB								S		U	P
SL56-0299	DK5	56	W	D	O		3		+0	.010	.013	CD		L						S		U	A
SL56-0300	DK5	56	B		M		2		+0	.010		B								S		U	P
SL56-0301	DK5	56	W	F	O		4		+0	.010	.012	B	CB			BC				S		U	P
SL56-0302	DK5	56	W		S		4		+0	.010	.012	CB				CI				S		U	P
SL56-0303	DK5	56	W	D	O		2		+0	.010	.015	B				CK				X		U	P
SL56-0304	DK5	56	B	U	O		3		+0	.010		B				B				X		U	P
SL58-0305	DK5	56	W	D	O	W	3		+0	.010	.013	B				BC				X		U	P
SL56-0306	DK5	56	B	U	O		1		+0	.010		B										U	A
SL56-0307	DK5	56	W		S		5		+0	.010	.010	D		LNG		A						U	A
SL56-0308	DK5	56	W		M		2		+0	.010	.015	CB				BI				S		U	P
SL56-0309	DK5	56	W	D	O		3		+0	.010	.013	B				C						U	P
SL56-0310	DK5	56	B	U	O		3		+0	.010		B				CN6				S		U	P
SL56-0311	DK5	56	W	D	O		1		+0	.010	.018	DB										U	P
SL56-0312	DK5	56	B		S		3		+0	.010		D				C				X		U	P
SL56-0313	DK5	56	W		S		3		+0	.010	.013	DB				CN						U	P
SL56-0314	DK5	56	W		S		2		+0	.010	.015	CB								S		U	P
SL56-0315	DK5	56	B	U	O	W	3		+0	.010		BD				B				S		U	P
SL56-0316	DK5	56	B	U	O		3		+0	.010		B								X		U	P
SL56-0317	DK5	56	W		M		2		+00	.008	.012	B				I				X		U	P
SL58-0318	DK5	58	B	U	U		U		+00	.008		BD				6						U	P
SL56-0319	DK5	56	W	D	O	W	U		+00	.008		B		N		C						U	A
SL56-0320	DK5	56	W	D	O		3		+00	.008	.011	C			L	CN						U	A
SL56-0321	DK5	56	W	D	O		4		+00	.008	.009	DB				BC				S		U	P
SL56-0322	DK5	56	W		M		4		+00	.008	.009	BD		L						X		U	P
SL56-0323	DK5	56	W		M		2		+00	.008	.012	DB				B				S		U	A
SL56-0324	DK5	56	W	D	O		1		+00	.008	.015	GB								X		U	P
SL56-0325	DK5	56	U	U	U		1		+00	.008		B				N				X		U	P
SL56-0326	DK5	56	B	U	O	W	5		+00	.008		CB		N								U	A
SL58-0327	DK5	56	W	D	O		5		+00	.008	.008	C		L						S		U	P
SL56-0328	DK5	56	B	U	O		3		+00	.008		C				C6				X		U	P
SL56-0329	DK5	56	B		S	C	4		+00	.008		CD				F				S		U	P
SL56-0330	DK5	56	B	U	O		1		+00	.008		CD				46				S		U	A
SL56-0331	DK5	56	B		S		4		+00	.008		BD				C						U	P
SL56-0332	DK5	56	B	D	O		2		+00	.008		BD				CN				S		U	P
SL56-0333	DK5	56	U	U	U		U		+00	.008		DB										U	P
SL56-0334	DK5	56	W		S		4		+00	.008	.009	B				BC				S		U	P
SL56-0335	DK5	56	W	D	O	W	3		+00	.008	.011	CD								X		U	P
SL56-0336	DK5	56	W	D	O		2		+00	.008	.012	CB	B			B				X		U	A
SL56-0337	DK5	56	W		S	O	4	N	+00	.008	.009	AB		L								U	P
SL56-0338	DK5	56	B		S		4		+00	.008		B								X		U	P
SL56-0339	DK5	56	B	U	O	W	2	N	+00	.008		D								S		U	P
SL56-0340	DK5	56	B	U	O	W	4		+00	.008		D				6				X		U	P
SL56-0341	DK5	56	B	D	O		3		+00	.008		CB				N5						U	P
SL56-0342	DK5	56	B	U	O		2		+00	.008		B				C						U	P
SL56-0343	DK5	56	W	F	O		2		+00	.008	.012	B				C				S		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0344	DK5	56	B		M		4		+00	.008		CB				I						U	P
SL56-0345	DK5	56	W		S	M	3	N	+00	.008	.011	CB										U	P
SL56-0346	DK5	56	W	D	O		4		+00	.008	.009	CB		L		C				S		U	A
SL56-0347	DK5	56	W	D	O		3		+00	.008	.011	B		L		CN	C			S		U	P
SL56-0348	DK5	56	B	U	O		3		+00	.008		CB				C6				X		U	P
SL56-0349	DK5	56	W	D	O		3		+00	.008	.011	B		I		B						U	P
SL56-0350	DK5	56	B	U	O	W	4		+00	.008		BD				4				S		U	P
SL56-0351	DK5	56	B		S		1		+00	.008		B				N						U	P
SL56-0352	DK5	56	B	U	U		1		+00	.008		CB										U	A
SL56-0353	DK5	56	B	U	O		1		+00	.008		B				56						U	P
SL56-0354	DK5	56	W	D	O		3		+00	.008	.011	B				BC				S		U	P
SL56-0355	DK5	56	W	D	O	W	3		+00	.008	.011	GB				C				S		U	P
SL56-0356	DK5	56	B	U	O		2		+00	.008		B				N						U	P
SL56-0357	DK5	56	B		S		4		+00	.008		B				A						U	P
SL56-0358	DK5	56	W	D	O		1		+00	.008	.015	CB								X		U	P
SL56-0359	DK5	56	W	D	O	W	5		+00	.008	.008	D		NG		A						U	A
SL56-0360	DK5	56	B	U	O		1		+00	.008		B										U	P
SL56-0361	DK5	56	W	D	O	W	1		+00	.008	.015	GB										U	P
SL56-0362	DK5	56	B	U	O		1		-00	.005		CB				CN456	A					U	P
SL56-0363	DK5	56	W	D	O		1		-00	.005	.009	CB				N				X		U	P
SL56-0364	DK5	56	B	U	O		1		-00	.005		CB				46						U	P
SL56-0365	DK5	56	W	D	O		4		-00	.005	.006	BD		L		CN	O					E?	P
SL56-0366	DK5	56	B	U	O		1		-00	.005		B				456						U	P
SL56-0367	DK5	56	B	U	O		2		-00	.005		B				46						U	P
SL56-0368	DK5	56	B	U	O		3		-00	.005		B				C						U	P
SL56-0369	DK5	56	B	U	U		U		-00	.005		B								X		U	P
SL56-0370	DK5	56	W		S		1		-00	.005	.009	B			L	7				X		U	P
SL56-0371	DK5	56	B	U	O		1		-00	.005		BD				5						U	P
SL56-0372	DK5	56	B		S		3		-00	.005		D										U	P
SL56-0373	DK5	56	W	D	O	W	1		-00	.005	.009	YB								S		U	P
SL56-0374	DK5	56	W		S		3		-00	.005	.007	CB		L						X		U	P
SL56-0375	DK5	56	W		S		3		-00	.005	.007	BD				B						U	P
SL56-0376	DK5	56	W	D	O	W	3		-00	.005	.007	CB				C				S		U	P
SL56-0377	DK5	56	B	U	O		1		-00	.005		C				N						U	A
SL56-0378	DK5	56	W	D	O		4		-00	.005	.006	C				B				X		U	A
SL56-0379	DK5	56	B	U	U		1		-00	.005		B				6						U	P
SL56-0380	DK5	56	W	D	O		2		-00	.005	.008	BD				C				S		U	P
SL56-0381	DK5	56	B		M		U		-00	.005		CD				IN				S		U	P
SL56-0382	DK5	56	W		S		2		-00	.005	.008	GB								X		U	P
SL56-0383	DK5	56	W	D	O		2		-00	.005	.008	B				BC						U	P
SL56-0384	DK5	56	W	D	O		1		-00	.005	.009	B				N						U	A
SL56-0385	DK5	56	B	U	O	W	5		-00	.005		AB		O								U	A
SL56-0386	DK5	56	W	D	O		3		-00	.005	.007	CD				BN				X		U	P
SL56-0387	DK5	56	B	U	O		4		-00	.005		CB				C				X		U	P
SL56-0388	DK5	56	B		S		4		-00	.005		B				C				X		U	P
SL56-0389	DK5	56	B	U	O		2		-00	.005		CD				C						U	P
SL56-0390	DK5	56	W	D	O		1		-00	.005	.009	B				N						U	P
SL56-0391	DK5	56	W	D	O		3	N	-00	.005	.007	D				C				X		U	P
SL56-0392	DK5	56	W	D	O		3		-00	.005	.007	B								X		U	P
SL56-0393	DK5	56	W	D	O		1		-00	.005	.009	CB								X		U	P
SL56-0394	DK5	56	B	U	U		1		-00	.005		CB								S		U	A
SL56-0395	DK5	56	W	D	O	W	1		-00	.005	.009	GB								X		U	P
SL56-0396	DK5	56	W	D	O		4		-00	.005	.006	CD		L			C			X		U	P
SL56-0397	DK5	56	W		S		4		-00	.005	.006	B		L						X		U	P
SL56-0398	DK5	56	B	U	O		3		-00	.005		B								X		U	P
SL56-0399	DK5	56	W	D	O		3		-00	.005	.007	B				BC						U	P
SL56-0400	DK5	56	W		S		2		-00	.005	.008	B				C				X		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0401	DK5	56	B	U	O	W	5		-00	.005		CB		L		A						U	P
SL56-0402	DK5	56	B		M		4		-00	.005		CB				BC						U	A
SL56-0403	DK5	56	B	U	O	W	4		-00	.005		BD				C46				S		U	P
SL56-0404	DK5	56	W	D	O	W	3		-00	.005	.007	CB				BCK				X		U	P
SL56-0405	DK5	56	W	D	O		4		-00	.005	.006	B				A				X		U	P
SL56-0406	DK5	56	W	D	O		3		-00	.005	.007	B				AC				X		U	P
SL56-0407	DK5	56	U	U	U		1		-00	.005		B										U	A
SL56-0408	DK5	56	B	U	O	W	3		-00	.005		B	CB			C				X		U	P
SL56-0409	DK5	56	B	U	O		5		-00	.005		CB		L								U	A
SL56-0410	DK5	56	W		S		3		-00	.005	.007	BD				C				X		U	P
SL56-0411	DK5	56	W	D	O		1		-00	.005	.009	CB								X		U	P
SL56-0412	DK5	56	W	D	O		2		-00	.005	.008	CB				C				X		U	P
SL56-0413	DK5	56	B	U	O		4		-00	.005		B		L		C				S		U	P
SL56-0414	DK5	56	W		S		1		-00	.005	.009	CD										U	P
SL56-0415	DK5	56	B		S		4		-00	.005		B		L								U	P
SL56-0416	DK5	56	W	U	O		1		-00	.005	.009	CB										U	P
SL56-0417	DK5	56	W		S		4		-00	.005	.006	B		L		B						U	A
SL56-0418	DK5	56	W	D	O	W	4		-00	.005	.006	CB		L								U	P
SL56-0419	DK5	56	W	D	O		2		-00	.005	.008	B				CN				S		U	P
SL56-0420	DK5	56	B		S		5		-00	.005		C		O								U	P
SL56-0421	DK5	56	W		S		2		-00	.005	.008	B								X		U	P
SL56-0422	DK5	56	W	D	O		1		-00	.005	.009	CD										U	P
SL56-0423	DK5	56	B	U	O		4		-00	.005		B				C	C			X		U	A
SL56-0424	DK5	56	B	U	O		4		-00	.005		BD				6				X		U	P
SL56-0425	DK5	56	B	U	O		1		-00	.005		CB			L	46						U	P
SL56-0426	DK5	56	W	D	O		1		-00	.005	.009	D				CN				X		U	P
SL56-0427	DK5	56	W		S		4		-00	.005	.006	BD										U	A
SL56-0428	DK5	56	W	D	O	W	4		-00	.005	.006	B								X		U	P
SL56-0429	DK5	56	B	U	O		4		-00	.005		CB										U	A
SL56-0430	DK5	56	W		S		5		-00	.005	.005	CB										U	P
SL56-0431	DK5	56	W	D	O		3		-00	.005	.007	BD				C				S		U	A
SL56-0432	DK5	56	W	D	O		3		-00	.005	.007	BD				N				X		U	P
SL56-0433	DK5	56	B	U	O		4		-00	.005		DB								X		U	P
SL56-0434	DK5	56	W		S	M	5		-00	.005	.005	C		L						X		U	A
SL56-0435	DK5	56	W	D	O		4		-00	.005	.006	B		N						X		U	P
SL56-0436	DK5	56	B	U	U		2		-00	.005		DB								X		U	P
SL56-0437	DK5	56	B	U	O	W	1		-00	.005		B				F						U	A
SL56-0438	DK5	56	W	D	O		3	N	-00	.005	.007	B				CN				X		U	A
SL56-0439	DK5	56	W		S		1		-00	.005	.009	B										U	P
SL56-0440	DK5	56	W		S		3		-00	.005	.007	B								X		U	P
SL56-0441	DK5	56	B	U	O		1		-00	.005		D				N				X		U	P
SL56-0442	DK5	56	W	D	O	W	1		-00	.005	.009	D								S		U	P
SL56-0443	DK5	56	W	D	O	W	3		-00	.005	.007	B				BC				X		U	A
SL56-0444	DK5	56	W	D	O		2		-00	.005	.008	CB				Y				X		U	A
SL56-0445	DK5	56	W	F	O		1		-00	.005	.009	D				N				X		U	A
SL56-0446	DK5	56	W	D	O	W	2		-00	.005	.008	B										U	P
SL56-0447	DK5	56	W	D	O	W	3		-00	.005	.007	B								X		U	A
SL56-0448	DK5	56	B	U	O	W	4		-00	.005		BD								X		U	P
SL56-0449	DK5	56	W	D	O		3		-00	.005	.007	CB		N		BC				X		U	P
SL56-0450	DK5	56	W	D	O		2		-00	.005	.008	B				CY				X		U	P
SL56-0451	DK5	56	B	U	O		2		-00	.005		B				N						U	A
SL56-0452	DK5	56	W	D	O		5		-00	.005	.005	D		LG		A				X		U	A
SL56-0453	DK5	56	W	D	O		3		-00	.005	.007	BD								X		U	P
SL56-0454	DK5	56	W	D	O		3		-00	.005	.007	CB		I		Y						U	A
SL56-0455	DK5	56	W	D	O		3		-00	.005	.007	C				C						U	A
SL56-0456	DK5	56	W	D	O		4		-00	.005	.006	CB								S		U	P
SL56-0457	DK5	56	W	D	O		3	N	-00	.005	.007	B				CN						U	A

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL56-0458	DK5	56	W		M		2		-00	.005	.008	BD				N						U	A
SL56-0459	DK5	56	W		S		1		+17	.570	1.040	D				N				X		U	P
SLA094	DK5	56	B	D	O		4		+3	.020		CB				CD	C	A		S		E	U
SLA095	DK5	56	W	D	O		2	N	-00	.005	.005	CB				C				S		U	U
SLA096	DK5	56	W	D	O		4		+0	.010	.012	CB		L		B	O			X		E	P
SL40-0003	DK6	40	B	U	O	R	5		+3	.018		B		KL		A	C					U	P
SL40-0004	DK6	40	U		A		3		+0	.010		B	C	KLN		BK						U	A
SL40-0005	DK6	40	B	U	O	W	4		+5	.029		B		KL		C				X		U	P
SL40-0006	DK6	40	U	D	C		U		+8	.068		C		PN		H						U	A
SL40-0007	DK6	40	W		S	O	5		+0	.010	.010	D	B	L		CY	C					U	P
SL40-0008	DK6	40	B		S		2		+14	.250		DB				C				S	X	U	P
SL40-0009	DK6	40	B	U	O		1		+9	.084		DB				56				S		U	P
SL40-0010	DK6	40	B	U	O		3		+8	.068		BD				C	A			S		U	P
SL40-0011	DK6	40	B		S		5		+8	.084		DB		L						S		U	P
SL40-0012	DK6	40	W	D	O		4		+8	.068	.080	B	CB			BC				S		U	A
SL40-0013	DK6	40	W	D	O	W	1		+7	.052	.094	CB			L					S		U	A
SL40-0014	DK6	40	U	U	O		3		+7	.052		D				CJ				S		U	A
SL40-0015	DK6	40	B	U	U		U		+7	.052		D				C8				S		U	P
SL40-0016	DK6	40	W		S		3	N	+7	.052	.069	B								S		U	A
SL40-0017	DK6	40	B	U	O		1		+7	.052		D								X		U	P
SL40-0018	DK6	40	W	D	O		4	N	U			DB		L		C				S		U	P
SL40-0019	DK6	40	B	U	O		5		U			C				A						U	A
SL40-0020	DK6	40	W	D	O		1		+6	.037	.067	D										U	P
SL40-0021	DK6	40	W		M		2		+6	.037	.060	DB				J				S		U	A
SL40-0022	DK6	40	B	U	O		2		+5	.029		DB				5				X		U	P
SL40-0023	DK6	40	B		S		5		+5	.029		B		L		C				S		U	P
SL40-0024	DK6	40	B	U	U		1		+5	.029		B				CD6				S	X	U	A
SL40-0025	DK6	40	W	D	O		2		+5	.029	.045	D	B			C						U	A
SL40-0026	DK6	40	W		S		1		+5	.029	.053	DB								S		U	P
SL40-0027	DK6	40	W		S		5		+4	.023	.023	D					C			S		U	A
SL40-0028	DK6	40	W		S		5		+4	.023	.023	B				A						U	P
SL40-0029	DK6	40	B	U	U		1		+4	.023		CD				FG				S		U	A
SL40-0030	DK6	40	B		S		5		+3	.018		CD	B			C				X		U	P
SL40-0031	DK6	40	B	U	O		1		+3	.018		C			P							U	P
SL40-0032	DK6	40	U	U	O		4		+3	.018		CD				A						U	P
SL40-0033	DK6	40	B	U	O		2		+3	.018		B				C6						U	P
SL40-0034	DK6	40	W	F	O		1		+3	.018	.033	CD								S		U	A
SL40-0035	DK6	40	B	U	U		U		+3	.018		B				C						U	A
SL40-0036	DK6	40	B	U	O		2		+3	.018		B				C				X		U	A
SL40-0037	DK6	40	W	D	O	W	4		+3	.018	.021	CB				A				S		U	A
SL40-0038	DK6	40	W	D	O		2	N	+3	.018	.028	CB				C				X		U	A
SL40-0039	DK6	40	B	U	O		3		+3	.018		DB				C6				X		U	P
SL40-0040	DK6	40	B		S		4	N	+3	.018		BD										U	P
SL40-0041	DK6	40	B	U	U		1		+3	.018		GB				C				X		U	P
SL40-0042	DK6	40	B	U	O		1		+3	.018		B								X		U	P
SL40-0043	DK6	40	B	U	O	W	3		+3	.018		CD				C						U	P
SL40-0044	DK6	40	B	U	U		1		+2	.015		B										U	A
SL40-0045	DK6	40	W	D	O		5		+2	.015	.015	CB		LK		AC				X		U	P
SL40-0046	DK6	40	W	F	O		4		+2	.015	.018	B				C				X		U	P
SL40-0047	DK6	40	W		M		3	N	+2	.015	.020	CB								X		U	P
SL40-0048	DK6	40	W		M		4		+2	.015	.018	B		KL						S		U	P
SL40-0049	DK6	40	B	U	U		U		+2	.015		CB				6				X		U	P
SL40-0050	DK6	40	B	U	U		1		+2	.015		B				6						U	A
SL40-0051	DK6	40	B	U	O		1		+2	.015		B	CB			6						U	P
SL40-0052	DK6	40	B		S		3		+2	.015		CD				6				S		U	P
SL40-0053	DK6	40	B	U	O		U		+2	.015		B								X		U	P
SL40-0054	DK6	40	B	U	U		1		+2	.015		B				6						U	A

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL40-0055	DK6	40	B	U	O		4		+2	.015		B	CB			6				S		U	P
SL40-0056	DK6	40	B	U	O		3		+2	.015		CD				CD6				S		U	A
SL40-0057	DK6	40	W	D	O	R	2		+2	.015	.023	B		N						S		U	A
SL40-0058	DK6	40	U	U	U		U		+2	.015		CB		L						S		U	A
SL40-0059	DK6	40	W	D	O	W	5		+1	.012	.012	B	BD	L		A				S		U	P
SL40-0060	DK6	40	B	U	O		2		+1	.012		C				CY6				S		U	A
SL40-0061	DK6	40	B	U	O	C	3		+1	.012		CB				C6				S		U	P
SL40-0062	DK6	40	B	U	U		1		+1	.012		CB				6						U	A
SL40-0063	DK6	40	B		S		3	N	+1	.012		CD				Y6				S		U	P
SL40-0064	DK6	40	B	U	U		1		+1	.012		CB				6						U	A
SL40-0065	DK6	40	B	U	O		3		+1	.012		B	BD			C6				S		U	A
SL40-0066	DK6	40	B	U	O		1		+1	.012		DB				6				X		U	P
SL40-0067	DK6	40	B	U	O	C	1		+1	.012		GB				FG6						U	A
SL40-0068	DK6	40	W	D	O		5		+1	.012	.012	CB		L						S		U	P
SL40-0069	DK6	40	B	U	O		1		+1	.012		C				5						U	A
SL40-0070	DK6	40	B	U	O		5		+1	.012		C								S		U	P
SL40-0071	DK6	40	B	U	O		3		+1	.012		CB				B				S		U	A
SL40-0072	DK6	40	W		M	S	5		+1	.012	.012	B		L		C				S		U	P
SL40-0073	DK6	40	W	D	O		2		+1	.012	.018	B		I		C				X		U	P
SL40-0074	DK6	40	W	D	O		5		+0	.010	.010	C		L		C	C					U	A
SL40-0075	DK6	40	B	U	O	W	4		+0	.010		DB				C				X		U	P
SL40-0078	DK6	40	W		M		5		+0	.010	.010	CD		L		C						U	P
SL40-0077	DK6	40	B	U	O		1		+0	.010		B				5						U	P
SL40-0078	DK6	40	B	U	O		4		+0	.010		B	CB							X		U	P
SL40-0079	DK6	40	B		M		3		+0	.010		BD								S		U	P
SL40-0080	DK6	40	B	U	O		3		+0	.010		CD				C6				X		U	P
SL40-0081	DK6	40	B	U	U		1		+0	.010		B				6				X		U	A
SL40-0082	DK6	40	B	U	O		5		+0	.010		DB		KLG			C			S		U	P
SL40-0083	DK6	40	B		S		1		+0	.010		B								S		U	A
SL40-0084	DK6	40	B	U	O		5		+0	.010		CD		KG		A						U	A
SL40-0085	DK6	40	B	U	O		3		+0	.010		CB				C				S		U	P
SL40-0086	DK6	40	W	F	O		5		+0	.010	.010	CB		G		A				S		U	A
SL40-0087	DK6	40	U	U	U		1		+0	.010		CB										U	A
SL40-0088	DK6	40	B	U	O		1		+0	.010		B				FH6				S		U	A
SL40-0089	DK6	40	B	U	O	W	1		+0	.010		B	CB							X		U	P
SL40-0090	DK6	40	B	U	O		3		U			CD				C				X		U	A
SL40-0091	DK6	40	W		S		5		+00	.008	.008	D		L						S		U	P
SL40-0092	DK6	40	W		M		5		+00	.008	.008	DB		L						S	X	U	P
SL40-0093	DK6	40	B	U	U		1		+00	.008		B								X		U	P
SL40-0094	DK6	40	B	U	O		1		+00	.008		C				6				S		U	A
SL40-0095	DK6	40	B	U	O		5		+00	.008		B	CB	L						S		U	A
SL40-0096	DK6	40	B	U	O		1		+00	.008		BD										U	P
SL40-0097	DK6	40	W	D	O		3	N	+00	.008	.011	CD								S		U	A
SL40-0098	DK6	40	B	U	O		1		+00	.008		B										U	P
SL40-0099	DK6	40	B	U	O		1		+00	.008		DB				6				X		U	P
SL40-0100	DK6	40	B	U	O		4	N	+00	.008		C								S		U	P
SL40-0101	DK6	40	B	D	O		2		+00	.008		B	CB							S	X	U	P
SL40-0102	DK6	40	B	U	O		5		+00	.008		B		L		C				S		U	P
SL40-0103	DK6	40	W	D	O	C	1		+00	.008	.015	DB				FH				X		U	P
SL40-0104	DK6	40	W	D	O		5		+00	.008	.008	D		KL						X		U	P
SL40-0105	DK6	40	W	D	O		4		+00	.008	.009	B				C						U	A
SL40-0106	DK6	40	W	D	O		5		+00	.008	.008	D		L						S		U	P
SL40-0107	DK6	40	B		S		5		+00	.008		D		L						S		U	P
SL40-0108	DK6	40	W	D	O	C	3		+00	.008	.011	B				CFH				S		U	A
SL40-0109	DK6	40	W	D	O		2		+00	.008	.012	DB				C				S		U	P
SL40-0110	DK6	40	B	U	O		1		+00	.008		B										U	P
SL40-0111	DK6	40	W	D	O		3		+00	.008	.011	CB				C						U	A

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL31-0123	DK3	31	B	D	O	C	U		+00	.008		DB				H				S		U	P
SL31-0124	DK3	31	W	D	O		1		+0	.010	.018	B								X		U	P
SL31-0125	DK3	31	U	D	O		U		+0	.010		B								X		U	P
SL31-0126	DK3	31	W		M		3		+0	.010	.013	C										U	A
SL31-0127	DK3	31	B	D	O		3	N	+0	.010		DB		L		U						U	A
SL31-0128	DK3	31	W		S		5		+0	.010	.010	DB		G						X		U	A
SL31-0129	DK3	31	W	D	O		5		+0	.010	.010	CB								S		U	A
SL31-0130	DK3	31	W		S		5		+0	.010	.010	GB								S		U	A
SL31-0131	DK3	31	B	D	O	W	1		+0	.010		B								S		U	P
SL31-0132	DK3	31	W	D	O		2		+0	.010	.015	B								S		U	A
SL31-0133	DK3	31	W		A		U		+0	.010		C								X		U	P
SL31-0134	DK3	31	W	D	O		2		+0	.010	.015	B		L								U	P
SL31-0135	DK3	31	W	D	O		1		+0	.010	.018	B										U	A
SL31-0136	DK3	31	B	D	O		2		+0	.010		B								S	X	U	P
SL31-0137	DK3	31	B	D	O		5		+0	.010		CB								X		U	A
SL31-0138	DK3	31	W	D	O		3		+0	.010	.013	C				C				S		U	A
SL31-0139	DK3	31	W		S		1		+0	.010	.018	B										U	U
SL31-0140	DK3	31	W	D	O		4		+1	.012	.014	B				U				S		U	P
SL31-0141	DK3	31	W	U	U		1		+1	.012	.022	BD				H						U	A
SL31-0142	DK3	31	B	U	U		1		+1	.012		CB								X		U	P
SL31-0143	DK3	31	U	U	U		1		+1	.012		B										U	P
SL31-0144	DK3	31	W	D	O		3		+1	.012	.016	B								S		U	P
SL31-0145	DK3	31	B	D	O		1		+1	.012		CB				4						U	P
SL31-0146	DK3	31	B	D	O	W	3		+1	.012		B										U	P
SL31-0147	DK3	31	B	D	O		3		+1	.012		CB								S		U	P
SL31-0148	DK3	31	W		M		5		+1	.012	.012	C		L						X		U	P
SL31-0149	DK3	31	W	D	O		1		+1	.012	.022	CB								X		U	P
SL31-0150	DK3	31	W		A		5		+1	.012	.012	B								X		U	P
SL31-0151	DK3	31	B	D	O		3		+1	.012		CB										U	P
SL31-0152	DK3	31	W	D	O		3		+1	.012	.016	CB										U	P
SL31-0153	DK3	31	B	U	U		1		+1	.012		B								S		U	P
SL31-0154	DK3	31	B		S		4		+1	.012		B										U	P
SL31-0155	DK3	31	B	D	O		5		+2	.015		B		L						S		U	P
SL31-0156	DK3	31	B	D	O		1		+2	.015		CB								S		U	P
SL31-0157	DK3	31	B	D	O		4		+2	.015		B										U	P
SL31-0158	DK3	31	W	D	O		5		+2	.015	.015	B		K						X		U	P
SL31-0159	DK3	31	B	U	U		U		+2	.015		GB										U	P
SL31-0160	DK3	31	B	U	U		U		+2	.015		B										U	P
SL31-0161	DK3	31	B	D	O	W	2		+2	.015		B										U	P
SL31-0162	DK3	31	B	U	U		U		+2	.015		DB										U	P
SL31-0163	DK3	31	B	D	O		1		+2	.015		B										U	P
SL31-0164	DK3	31	B		S		1		+2	.015		CB				U				X		U	P
SL31-0165	DK3	31	B	U	U		U		+2	.015		BD										U	P
SL31-0166	DK3	31	B	D	O	W	U		+2	.015		CB								X		U	P
SL31-0167	DK3	31	W	D	O		4		+3	.018	.021	CD				BC		O		S		E?	P
SL31-0168	DK3	31	B	D	O		3		+3	.018		CD				BC56						U	P
SL31-0169	DK3	31	B	U	O	W	4		+3	.018		CB				A				S		U	P
SL31-0170	DK3	31	B	U	O	W	5		+3	.018		B	D	L		C				S		U	P
SL31-0171	DK3	31	B		M		4		+3	.018		CB				AC				S		U	P
SL31-0172	DK3	31	B		S		1		+3	.018		CB				4				S		U	P
SL31-0173	DK3	31	U	U	U		U		+3	.018		B				6						U	A
SL31-0174	DK3	31	B	U	O		1		+3	.018		B		L		6				S		U	A
SL31-0175	DK3	31	W		S		4		+3	.018	.021	B										U	P
SL31-0178	DK3	31	W	D	O		1		+3	.018	.033	D								X		U	P
SL31-0177	DK3	31	B	U	O		3		+3	.018		B				C5				S		U	P
SL31-0178	DK3	31	B		S		3		+3	.018		B								S		U	P
SL31-0179	DK3	31	B	U	O	W	5		+3	.018		CB		KG		A5				S		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL31-0180	DK3	31	B	U	O	C	2		+3	.018		B				H						U	P
SL31-0181	DK3	31	B	U	O	W	4		+3	.018		CB				C	C					U	A
SL31-0182	DK3	31	W		M		2		+3	.018	.028	D				CI				S		U	A
SL31-0183	DK3	31	B	U	O	W	2		+3	.018		B				5				S		U	P
SL31-0184	DK3	31	B	U	O	W	3		+3	.018		BD				BC				S		U	P
SL31-0185	DK3	31	B	U	O		3		+3	.018		BD				6						U	P
SL31-0186	DK3	31	B		S		5		+3	.018		CB		KL		DI						U	P
SL31-0187	DK3	31	W	D	O		4		+3	.018	.021	B	CB			C				S		U	P
SL31-0188	DK3	31	W		S		5		+3	.018	.018	BD		K		AI				S		U	A
SL31-0189	DK3	31	B		S		4		+3	.018		B	CB			56				X		U	P
SL31-0190	DK3	31	B	U	O	W	3		+3	.018		CB				A6				S		U	P
SL31-0191	DK3	31	B	U	O		5		+3	.018		B	CD	L		C						U	P
SL31-0192	DK3	31	B		S		1		+3	.018		A				C6						U	U
SL31-0193	DK3	31	B		M		5		+3	.018		D		K								U	A
SL31-0194	DK3	31	B	U	U		1		+3	.018		BY										U	P
SL31-0195	DK3	31	W		S		3		+4	.023	.031	CG				BCJ				S		U	A
SL31-0196	DK3	31	B	U	O		3		+4	.023		B				BJ45				S		U	P
SL31-0197	DK3	31	U	U	U		U		+4	.023		B										U	P
SL31-0198	DK3	31	W		M		3		+4	.023	.031	C		K		CI				S		U	A
SL31-0199	DK3	31	W	D	O	W	5		+4	.023	.023	D		KL						S		U	P
SL31-0200	DK3	31	B	U	O		5		+4	.023		BD		K								U	P
SL31-0201	DK3	31	W	D	O		1		+4	.023	.042	B	CB			C						U	P
SL31-0202	DK3	31	W	F	O		5		+4	.023	.023	D		KL		C				X		U	P
SL31-0203	DK3	31	B		M		5		+4	.023		BD		KL			A			S		U	P
SL31-0204	DK3	31	B	U	O		3		+4	.023		B				C				X		U	P
SL31-0205	DK3	31	W	D	O		1		+4	.023	.042	CB								S		U	P
SL31-0206	DK3	31	W	D	O		3		+4	.023	.031	B	CB									U	P
SL31-0207	DK3	31	B	U	O	W	1		+4	.023		B										U	P
SL31-0208	DK3	31	B	D	O		1		+4	.023		B										U	P
SL31-0209	DK3	31	W		S		2		+4	.023	.035	B			L	B						U	P
SL31-0210	DK3	31	B	U	O		3		+4	.023		CB										U	P
SL31-0211	DK3	31	B		S		3		+4	.023		B				C				S		U	P
SL31-0212	DK3	31	B	U	O		2		+5	.029		CB		I		C				X		U	P
SL31-0213	DK3	31	B	U	U		U		+5	.029		B				6						U	A
SL31-0214	DK3	31	W	D	O	W	3		+5	.029	.039	B		I		C				S		U	P
SL31-0215	DK3	31	B	U	O		3		+5	.029		CB				C						U	A
SL31-0216	DK3	31	W	D	O		5		+5	.029	.029	D		KLN						X		U	P
SL31-0217	DK3	31	W	D	O	W	5		+5	.029	.029	L		K		C				X		U	P
SL31-0218	DK3	31	B	U	O		1		+5	.029		B				6						U	P
SL31-0219	DK3	31	B		S		1		+5	.029		BY										U	A
SL31-0220	DK3	31	B		S		3		+5	.029		B										U	P
SL31-0221	DK3	31	B		M		3		+5	.029		CB	C			BCI				X		U	P
SL31-0222	DK3	31	W		S		2		+5	.029	.045	CB				C				X		U	P
SL31-0223	DK3	31	B		S		3		+5	.029		D				C						U	P
SL31-0224	DK3	31	B		S		2		+5	.029		DB								X		U	P
SL31-0225	DK3	31	W	D	O		2		+5	.029	.045	GB				C				S		U	P
SL31-0226	DK3	31	B	D	O	W	3		+5	.029		D								X		U	P
SL31-0227	DK3	31	B	U	O		2		+6	.038	.058	DB				56				S		U	P
SL31-0228	DK3	31	B	U	O		3		+6	.038		CB	B			C5				X		U	P
SL31-0229	DK3	31	B	U	O		1		+6	.038		B				C46				X		U	P
SL31-0230	DK3	31	B	U	O	W	5		+6	.038		BD		KL		C4				S		U	P
SL31-0231	DK3	31	B	U	O		1		+8	.038		BD				8				S		U	P
SL31-0232	DK3	31	B	U	O		1		+8	.038		B	CB							S		U	P
SL31-0233	DK3	31	B		S		1		+6	.038		B				B				S		U	P
SL31-0234	DK3	31	B	U	O	W	5		+6	.038		BD				A						U	P
SL31-0235	DK3	31	W	D	O		1		+8	.038	.069	BD				BC				X		U	P
SL31-0236	DK3	31	B	U	O		1		+6	.036		B								X		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL31-0237	DK3	31	B	U	O	W	4		+7	.052		BP				AC6						U	A
SL31-0238	DK3	31	W		S		3	N	+7	.052	.069	B		L		C	C			S		U	P
SL31-0239	DK3	31	B	U	O	W	5		+7	.052		BD				AC				X		U	P
SL31-0240	DK3	31	W	D	O		3	N	+7	.052	.069	CB		K		A						U	P
SL31-0241	DK3	31	U	U	O		1		+7	.052		BP				F				S		U	P
SL31-0242	DK3	31	B	U	U		1		+7	.052		CB				6						U	A
SL31-0243	DK3	31	W		S		1		+8	.068	.124	BD								S		U	A
SL31-0244	DK3	31	B	U	U		1		+8	.068		BD				6				S		U	P
SL31-0245	DK3	31	W		S	M	5		+8	.068	.068	D		GK		A				X		U	P
SL31-0246	DK3	31	B	U	U		1		+8	.068		BD								X		U	P
SL31-0247	DK3	31	B		S		2		+8	.068		D										U	P
SL31-0248	DK3	31	B	U	U		U		+8	.088		B				CD						U	A
SL31-0249	DK3	31	W	F	O		2		+9	.084	.129	BD				C				S		U	P
SL31-0250	DK3	31	B	U	O		1		+9	.084		B	CB							X		U	A
SL31-0251	DK3	31	W	D	O		1		+10	.110	.200	CB								S		U	A
SL31-0252	DK3	31	B	U	O		3		+11	.128		B				B				S		U	A
SL31-0253	DK3	31	W	D	O		1		+12	.166	.302	GB			P					X		U	P
SL31-0254	DK3	31	B		M		2		+8	.088		DB				456				S		U	P
SL31-0255	DK3	31	B	U	O	W	1		+8	.038		GB				C				X		U	P
SL31-0256	DK3	31	W	D	O	W	5		+8	.038	.038	D		K		A				X		U	P
SL31-0257	DK3	31	W	D	O		1		+8	.038	.069	BD				C				S	X	U	A
SL31-0258	DK3	31	B		S		4		+5	.029		BG		KL		C				X		U	P
SL31-0259	DK3	31	B	U	O	W	4		+4	.023		CB				C6				X		U	P
SL31-0260	DK3	31	W	D	O		1		+3	.018	.033	CB										U	A
SL31-0261	DK3	31	B	U	O		1		+3	.018		D			L	4						U	A
SL31-0262	DK3	31	W	D	O		1		+2	.015	.027	C										U	A
SL31-0263	DK3	31	W	D	O	W	4		+20	1.220	1.440	D				C				S		U	P
SL01-15	DK4	47	W	Q	O		4		+11	.120	.140	C				CD	OC					E	A
SL01-16	DK4	47	W		M		2		+8	.060	.090					CI				S		E	P
SL47-0001A	DK4	47	U		F		U		-00	.005		L		G								U	U
SL47-0001B	DK4	47	U		F		U		-00	.005		L		G								U	U
SL47-0001C	DK4	47	U		F		U		-00	.005		L		G								U	U
SL47-0002	DK4	47	B	D	O		4		+4	.023		B				BCK	C			S		U	P
SL47-0003	DK4	47	W	D	O	W	5		-00	.005	.005	CB		OSN		C	C					U	P
SL47-0004	DK4	47	W		M		5		-00	.004	.004	C		OSN			A	C				P	P
SL47-0005	DK4	47	B	U	O	W	U	N	-00	.005		CB				C	A	C				U	P
SL47-0006	DK4	47	W		S	M	1		+3	.018	.033	B	C			BIK				S		U	A
SL47-0007	DK4	47	W	D	U		1		-00	.005	.009	D			L	K				S		U	A
SL47-0008	DK4	47	W	D	O		4		+7	.052	.061	CD				BC				S	X	U	P
SL47-0009	DK4	47	W		M		5		-00	.005	.005	C					C			X		U	A
SL47-0010	DK4	47	W		M		5		-00	.005	.005	CB		OS		A	C					U	A
SL47-0011	DK4	47	W	D	O		1		-00	.005	.009	C			L		O					E?	A
SL47-0012	DK4	47	B	U	O		1		+0	.010		C				456				S		U	A
SL47-0013	DK4	47	W	D	O	W	4		+9	.084	.099	CB		N		A				S		U	P
SL47-0014	DK4	47	W	D	U		3		+7	.052	.069	D		IN		BC				X		U	P
SL47-0015	DK4	47	B	U	O		1		+7	.052		B								X		U	P
SL47-0016	DK4	47	W	D	O		1		U			B								S		U	A
SL47-0017	DK4	47	B	U	C		U		+5	.029		D		P								U	P
SL47-0018	DK4	47	B	U	O		1		U			CD								X		U	A
SL47-0019	DK4	47	W	D	O	W	3	N	+00	.008	.011	CB										U	A
SL47-0020	DK4	47	B	U	O		3		+6	.038		CB		G		BC5						U	P
SL47-0021	DK4	47	B		S		4		+6	.038		D								S		U	P
SL47-0022	DK4	47	B	U	O		2		+6	.038		CB				CJ						U	P
SL47-0023	DK4	47	W	D	O		3	N	+6	.038	.051	D		L	L	A				S		U	P
SL47-0024	DK4	47	W		S		2		+6	.038	.058	B								X		U	P
SL47-0025	DK4	47	W	D	O		3		+6	.038	.051	CB		N		BC	C			S		U	A
SL47-0026	DK4	47	B	U	O	C	1		+5	.029		CB				FH				S		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL47-0027	DK4	47	W	D	O		3		+5	.029	.039	CB				CJ				X		U	P
SL47-0028	DK4	47	W		S		4		+5	.029	.034	C				BY				X		U	P
SL47-0029	DK4	47	B	U	O		1		+5	.029		B				Y46						U	A
SL47-0030	DK4	47	W	D	O		3		+5	.029	.039	CB				BC				S		U	P
SL47-0031	DK4	47	W	D	O	W	4		+5	.029	.034	DB		L						S		U	P
SL47-0032	DK4	47	W	D	O		3		+5	.029	.039	B				BC				S		U	P
SL47-0033	DK4	47	W	D	O	W	2		+5	.029	.045	AB				CJ				X		U	A
SL47-0034	DK4	47	B	U	O	W	3		+5	.029		CD				AC				X		U	P
SL47-0035	DK4	47	W		S		4		+4	.023	.027	B	CB			BC				S		U	A
SL47-0036	DK4	47	B	U	O		3		+4	.023		D				C				S		U	P
SL47-0037	DK4	47	B		S		2		+4	.023		BD				C				X		U	P
SL47-0038	DK4	47	W	D	O		1		+4	.023	.042	C		N		C						U	A
SL47-0039	DK4	47	W	U	U		1		+3	.018	.033	B		N								U	A
SL47-0040	DK4	47	B	U	O		2		U			DB				C				S		U	P
SL47-0041	DK4	47	B	U	O		5		+3	.018		CD		L		4				S		U	P
SL47-0042	DK4	47	W	D	O	C	5		+3	.018	.018	C		LPN								U	A
SL47-0043	DK4	47	W	D	O	W	4		+3	.018	.021	CD		L		A				S		U	P
SL47-0044	DK4	47	W	D	O		3		+3	.018	.024	B				BC				S		U	P
SL47-0045	DK4	47	W		M		3		+3	.018	.024	C		G		CI						U	A
SL47-0046	DK4	47	W	D	O	W	3		+3	.018	.024	CD				B				X		U	A
SL47-0047	DK4	47	B	U	O		1		+3	.018		B				6				X		U	P
SL47-0048	DK4	47	B	U	O		3		+2	.015		CB		NG		B				X		U	A
SL47-0049	DK4	47	B	U	U		3		+2	.015		CB		N		BC						U	A
SL47-0050	DK4	47	B	U	O	C	2		+2	.015		CB		PG								U	A
SL47-0051	DK4	47	W	D	O		1		+2	.015	.027	B		N						X		U	A
SL47-0052	DK4	47	W	D	O		3		+2	.015	.020	CB		N								U	A
SL47-0053	DK4	47	W		S		3		+2	.015	.020	CD				J				S		U	A
SL47-0054	DK4	47	W	F	O		3		+2	.015	.020	CB				CN				S		U	P
SL47-0055	DK4	47	B	U	O		2		+2	.015		DB								X		U	P
SL47-0056	DK4	47	B	U	O		3		+2	.015		CB				CJ6						U	A
SL47-0057	DK4	47	B	U	U		3		+2	.015		B				C				S		U	P
SL47-0058	DK4	47	W	D	O	W	2		+2	.015	.023	B								X		U	P
SL47-0059	DK4	47	B	U	U		U		+2	.015		C								S		U	P
SL47-0060	DK4	47	B	U	O		4		+2	.015		CD				C4				S		U	A
SL47-0061	DK4	47	W	D	O	W	5		+2	.015	.015	BD				A				X		U	P
SL47-0062	DK4	47	B	U	O		3	N	+2	.015		CB				C				S		U	P
SL47-0063	DK4	47	W	D	O		3	N	+1	.012	.016	B				C				X		U	P
SL47-0064	DK4	47	W	D	O		3	N	+1	.012	.016	DB		KNG								U	A
SL47-0065	DK4	47	B	U	O		5		+1	.012		CB		L						S		U	P
SL47-0066	DK4	47	B	U	O		3		+1	.012		B				BC				S		U	P
SL47-0067	DK4	47	B	U	O		3		+1	.012		C				BC						U	A
SL47-0068	DK4	47	B		S		5		+1	.012		B		L		AC						U	P
SL47-0069	DK4	47	B	U	U		U		+1	.012		B								X		U	P
SL47-0070	DK4	47	B	U	O		5		+1	.012		D		L		5				S		U	P
SL47-0071	DK4	47	B	U	O		2		+1	.012		B				56				X		U	P
SL47-0072	DK4	47	B	U	O		5		+1	.012		C		L		C				S		U	A
SL47-0073	DK4	47	B		S		3		+1	.012		CB				B				X		U	P
SL47-0074	DK4	47	B	U	O		2		+1	.012		B				J				X		U	A
SL47-0075	DK4	47	W	D	O	W	3	N	+1	.012	.016	CB								S		U	P
SL47-0076	DK4	47	W	D	O	W	2		+1	.012	.018	D				C				S		U	P
SL47-0077	DK4	47	B	D	O		4		+1	.012		B				B				S		U	P
SL47-0078	DK4	47	U	U	U		1		+1	.012		B								X		U	P
SL47-0079	DK4	47	W		S		2		+1	.012	.018	BD				B				S		U	P
SL47-0080	DK4	47	W		M		5		+1	.012	.012	C		LG		C						U	A
SL47-0081	DK4	47	B	U	U		U		+1	.012		B								S		U	P
SL47-0082	DK4	47	W		M		5		+1	.012	.012	CB		L		C						U	P
SL47-0083	DK4	47	W		M		1		+1	.012	.022	CB				CI				X		U	A

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL47-0084	DK4	47	B	U	O	C	2		+0	.010		D				F				X		U	A
SL47-0085	DK4	47	B	U	O		2		+0	.010		B				C				S		U	P
SL47-0086	DK4	47	B	U	U		U		+0	.010		CB										U	A
SL47-0087	DK4	47	W	D	O		3		+0	.010	.013	D				BCK				S		U	P
SL47-0088	DK4	47	B		S		3		+0	.010		CB				B				X		U	P
SL47-0089	DK4	47	W	D	O		3		+0	.010	.013	B	CB			CK				X		U	P
SL47-0090	DK4	47	W	D	O		2		+0	.010	.015	AB				K				X		U	P
SL47-0091	DK4	47	B	U	O		2		+0	.010		D								S		U	P
SL47-0092	DK4	47	W	D	O	W	4		+0	.010	.012	B				B				X		U	P
SL47-0093	DK4	47	B	U	O	W	3		+0	.010		CD				A				X		U	A
SL47-0094	DK4	47	B		S		3		+0	.010		CD								X		U	P
SL47-0095	DK4	47	B	U	O	W	5		+0	.010		D		KG						X		U	P
SL47-0096	DK4	47	B	U	C	O	1		+0	.010		B		P						X		U	P
SL47-0097	DK4	47	W	D	O		3		+0	.010	.013	B								X		U	P
SL47-0098	DK4	47	B	U	U		1		+0	.010		GB								S		U	P
SL47-0099	DK4	47	W	F	O		1		+0	.010	.018	B								S		U	A
SL47-0100	DK4	47	W	D	O	W	4		+0	.010	.012	B		L		A				X		U	P
SL47-0101	DK4	47	B	U	O		2		+0	.010		B								S		U	P
SL47-0102	DK4	47	W	D	O		2		+00	.008	.012	B				K				X		U	P
SL47-0103	DK4	47	W		S		3	N	+00	.008	.011	B				C				X		U	P
SL47-0104	DK4	47	B	U	O		2		+00	.008		D				C4				X		U	P
SL47-0105	DK4	47	B	U	O		4		+00	.008		B				BC				S		U	A
SL47-0106	DK4	47	B		S		3		+00	.008		BD				C4				S		U	P
SL47-0107	DK4	47	B		U		3		+00	.008		B				C				S		U	A
SL47-0108	DK4	47	W		S		5		+00	.008	.008	BD				A				X		U	P
SL47-0109	DK4	47	W		S		4		+00	.008	.009	B				A				X		U	P
SL47-0110	DK4	47	B	U	O		5		+00	.008		CB		L						S		U	P
SL47-0111	DK4	47	W	D	O		1		+00	.008	.015	D										U	P
SL47-0112	DK4	47	W	D	O	W	3		+00	.008	.011	B				BC				X		U	P
SL47-0113	DK4	47	W		S		3		+00	.008	.011	B				A						U	P
SL47-0114	DK4	47	W	D	O		3		+00	.008	.011	D		L		C				S		U	P
SL47-0115	DK4	47	B	U	O	W	4		+00	.008		D				58				X		U	P
SL47-0116	DK4	47	W	D	O	W	5		+00	.008	.008	D		LNG		C				X		U	P
SL47-0117	DK4	47	W		S		3		+00	.008	.011	B				BC						U	P
SL47-0118	DK4	47	B	U	O		4		+00	.008		CD				AC6				X		U	P
SL47-0119	DK4	47	W	D	O		4		+00	.008	.009	CB				BC				S		U	P
SL47-0120	DK4	47	W	D	O		5		+00	.008	.008	D		LN		A				S		U	P
SL47-0121	DK4	47	W		M		4		+00	.008	.009	D		L		B				S		U	P
SL47-0122	DK4	47	U	U	U		1		+00	.008		BD										U	P
SL47-0123	DK4	47	W	D	O		3		+00	.008	.011	C				JK				X		U	A
SL47-0124	DK4	47	W	D	O		1		-00	.005	.009	BD								X		U	P
SL47-0125	DK4	47	B	U	O	W	5		-00	.005		D								X		U	A
SL47-0126	DK4	47	W		M		5		-00	.005	.005	D		LN		I						U	A
SL47-0127	DK4	47	B	U	O		1		-00	.005		CD				C				S		U	A
SL47-0128	DK4	47	W	D	O		1		-00	.005	.009	DB				C				X		U	P
SL47-0129	DK4	47	W	D	O		1		-00	.005	.009	B				K				X		U	A
SL47-0130	DK4	47	W	D	O		3		-00	.005	.007	D				BC				S		U	A
SL47-0131	DK4	47	B	U	O		U		-00	.005		CD								S		U	A
SL47-0132	DK4	47	B	U	O		1		-00	.005		B								X		U	P
SL47-0133	DK4	47	B	U	O		2		-00	.005		B				C6				S		U	P
SL47-0134	DK4	47	B		S		4		-00	.005		C										U	P
SL47-0135	DK4	47	W		S		5		-00	.005	.005	CB				A						U	A
SL47-0136	DK4	47	B	U	O		4		-00	.005		CB				56						U	P
SL47-0137	DK4	47	W		S		1		-00	.005	.009	CB								X		U	P
SL47-0138	DK4	47	B		S		3		-00	.005		CB				5						U	P
SL47-0139	DK4	47	B	U	U		U		-00	.005		CD										U	A
SL47-0140	DK4	47	W		S		4		-00	.005	.006	BD										U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SH	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL47-0141	DK4	47	W	D	O	W	1		-00	.005	.009	B	BD									U	P
SL47-0142	DK4	47	B	U	U		U		-00	.005		CB										U	A
SL47-0143	DK4	47	B	U	O		1		-00	.005		B				K6						U	A
SL47-0144	DK4	47	W	D	O		2		-00	.005	.008	D								S		U	P
SL47-0145	DK4	47	W	D	O		1		-00	.005	.009	B										U	A
SL47-0146	DK4	47	B	U	O	W	4		-00	.005		CD		K		4				X		U	P
SL47-0147	DK4	47	B	U	O		1		-00	.005		B								S		U	P
SL47-0148	DK4	47	W		M		5		-00	.005	.005	CB				C						U	P
SL47-0149	DK4	47	B	U	O		1		-00	.005		CB				C						U	P
SL47-0150	DK4	47	B	U	O		2		-00	.005		D								X		U	P
SL47-0151	DK4	47	B	U	O		2		-00	.005		CB				B				S		U	P
SL47-0152	DK4	47	B	U	O	C	1		-00	.005		B				CH6						U	P
SL47-0153	DK4	47	B		S		4		-00	.005		DB				A4				X		U	P
SL47-0154	DK4	47	W		M		1		-00	.005	.009	B				I				S		U	P
SL47-0155	DK4	47	B	U	O		2		-00	.005		B								S		U	A
SL47-0156	DK4	47	W	U	U		1		-00	.005	.009	C										U	A
SL47-0157	DK4	47	B		M		1		-00	.005		CB				I						U	P
SL47-0158	DK4	47	B	D	O		5		-00	.005		CB				C						U	A
SL47-0159	DK4	47	W		S		3		-00	.005	.007	DB				C				X		U	P
SL47-0160	DK4	47	B		S		2		-00	.005		BD				C						U	P
SL47-0161	DK4	47	U	U	U		U		-00	.005		B										U	P
SL47-0162	DK4	47	W		S		4		-00	.005	.008	CB				B	A					U	P
SL47-0163	DK4	47	W	D	O		3		-00	.005	.007	CB				B				S		U	P
SL47-0164	DK4	47	U	U	U		1		-00	.005		CD				I				S		U	P
SL47-0165	DK4	47	W	D	O	W	5		-00	.005	.005	B		OG		A						U	A
SL47-0166	DK4	47	B	U	O		1		-00	.005		CD			L							U	P
SL47-0167	DK4	47	B	U	O		3		-00	.005		B				5				X		U	P
SL47-0168	DK4	47	W	D	O		5		-00	.005	.005	CB				A				S		U	A
SL47-0169	DK4	47	B	U	U		U		-00	.005		PB			L	O						U	A
SL47-0170	DK4	47	B		S		U		-00	.005		B				5						U	P
SL47-0171	DK4	47	B	U	O	W	4		-00	.005		CD				B				X		U	P
SL47-0172	DK4	47	W	D	O		2		-00	.005	.008	CB			L					S		U	A
SL47-0173	DK4	47	W	D	O	C	1		-00	.005	.009	DB			L	CH						U	A
SL47-0174	DK4	47	B	U	U		U		-00	.005		CB								X		U	P
SL47-0175	DK4	47	W	D	O		2		-00	.005	.008	B								S		U	P
SL47-0176	DK4	47	B		S		4		-00	.005		CB				I				X		U	P
SL47-0177	DK4	47	B	U	U		U		-00	.005		CD		G								U	A
SL47-0178	DK4	47	B	U	U		U		-00	.005		CD		G						X		U	P
SL47-0179	DK4	47	B	U	O		1		-00	.005		B	CD							X		U	A
SL47-0180	DK4	47	B	U	U		U		-00	.005		CB								X		U	A
SL47-0181	DK4	47	B	U	O		4		-00	.005		B				C				S		U	P
SL47-0182	DK4	47	B	U	O		4		-00	.005		CB										U	A
SL47-0183	DK4	47	B	U	O		1		-00	.005		B				C56						U	A
SL47-0184	DK4	47	B	U	O		3		-00	.005		CD				J				S		U	P
SL47-0185	DK4	47	B		S	M	1		-00	.005		B				I				X		U	P
SL47-0186	DK4	47	W	D	O		3	N	-00	.005	.007	DB				C				X		U	A
SL47-0187	DK4	47	B	U	O	W	5		-00	.005		D		OG		A						U	A
SL47-0188	DK4	47	B	U	O		1		-00	.005		CB			L					S		U	P
SL47-0189	DK4	47	W	D	O	C	1		-00	.005	.009	CD		P	L	H						U	A
SL47-0190	DK4	47	B	U	O		2		-00	.005		CB				J						U	A
SL47-0191	DK4	47	W	D	O	W	3		-00	.005	.007	B				B				X		U	P
SL47-0192	DK4	47	B	U	O	W	4		-00	.005		CB	B			A						U	P
SL47-0193	DK4	47	W	D	O	C	1		-00	.005	.009	CD				F						U	P
SL47-0194	DK4	47	B		S		3		-00	.005		B				J				X		U	P
SL47-0195	DK4	47	B	U	U		1		-00	.005		B										U	P
SL47-0196	DK4	47	W		M		3	N	-00	.005	.007	CB				AI				X		U	A
SL47-0197	DK4	47	B	U	O		3		-00	.005		B		N						S		U	A

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL47-0198	DK4	47	B		S		1		-00	.005		D	B									U	P
SL47-0199	DK4	47	B	U	U		U		-00	.005		B										U	A
SL47-0200	DK4	47	B	U	U		U		-00	.005		D								X		U	A
SL47-0201	DK4	47	W	D	O		2		-00	.005	.008	D				CD				S		U	A
SL47-0202	DK4	47	W	D	O		1		-00	.005	.009	CD				6				S		U	P
SL47-0203	DK4	47	B	U	O		1		-00	.005		B				6						U	P
SL47-0204	DK4	47	B	U	O		4		-00	.005		D	B			6						U	A
SL47-0205	DK4	47	B	D	O		5		-00	.005		DB		L		C5				S		U	P
SL47-0206	DK4	47	W	D	O		4		-00	.005	.006	CB				B	C			S		U	P
SL47-0207	DK4	47	W	D	O	W	3		-00	.005	.007	CB				J						U	P
SL47-0208	DK4	47	W		M		3		-00	.005	.007	CD				J				X		U	A
SL47-0209	DK4	47	B	U	U		U		-00	.005		CB										U	P
SL47-0210	DK4	47	W	D	O	C	2		-00	.005	.008	CD				HJ				S		U	A
SL47-0211	DK4	47	W	U	O		1		-00	.005	.009	CD								X		U	A
SL47-0212	DK4	47	B	U	O	W	5		-00	.005		CD		G		K						U	A
SL47-0213	DK4	47	B	U	O		1		-00	.005		B				6				X		U	P
SL47-0214	DK4	47	W	D	O		1		-00	.005	.009	C			L	J						U	A
SL47-0215	DK4	47	W	D	O		1		-00	.005	.009	B				C						U	P
SL47-0216	DK4	47	W	D	O		1		-00	.005	.009	C										U	P
SL47-0217	DK4	47	B	U	O		3		-00	.005		C				5						U	P
SL47-0218	DK4	47	B	U	O		3		-00	.005		CD				A						U	A
SL47-0219	DK4	47	W	D	O		1		-00	.005	.009	CB								X		U	P
SL47-0220	DK4	47	B	U	O		1		-00	.005		CD								X		U	P
SL47-0221	DK4	47	B	U	O		1		-00	.005		D				6				S		U	P
SL47-0222	DK4	47	W	D	O		2		-00	.005	-.008	B				B				S		U	P
SL47-0223	DK4	47	W	D	O		1		-00	.005	.009	CB								S		U	P
SL47-0224	DK4	47	W		S		1		-00	.005	.009	CB								X		U	P
SL47-0225	DK4	47	B	U	U		U		-00	.005		D		KG		6						U	A
SL47-0226	DK4	47	B	U	O		1		-00	.005		CB										U	P
SL47-0227	DK4	47	B	U	U		U		-00	.005		D		G								U	P
SL47-0228	DK4	47	B	U	O		1		-00	.005		CB		N						X		U	P
SL47-0229	DK4	47	B	U	O		1		-00	.005		CB										U	A
SL47-0230	DK4	47	B	U	O		1		-00	.005		B		N								U	P
SL47-0231	DK4	47	U		S		1		-00	.005		CD										U	P
SL47-0232	DK4	47	W	D	O	W	1		-00	.005	.009	CB								S		U	P
SL47-0233	DK4	47	B	U	U		1		-00	.005		CD										U	P
SL47-0234	DK4	47	W		M		5		-00	.005	.005	CD				AI				X		U	A
SL47-0235	DK4	47	W		S		5		-00	.005	.005	CD								X		U	A
SL47-0236	DK4	47	W		M		5		-00	.005	.005	CB				AI						U	A
SL47-0237	DK4	47	B	U	O		1		-00	.005		CB								S		U	P
SL47-0238	DK4	47	B	U	O		1		-00	.005		B								X		U	P
SL47-0239	DK4	47	W	D	O		5		-00	.005	.005	CA		L						S		U	A
SL47-0240	DK4	47	B	U	O		1		-00	.005		CD								S		U	P
SL47-0241	DK4	47	W	D	O		2		-00	.005	.008	D				C				S		U	A
SL47-0242	DK4	47	B	U	U		1		-00	.005		CB				Y						U	P
SL47-0243	DK4	47	B	U	O		2		-00	.005		CD				J						U	P
SL47-0244	DK4	47	W	D	O		1		-00	.005	.009	CB										U	A
SL47-0245	DK4	47	W		S	M	5		-00	.005	.005	D		OS						S		U	P
SL47-0246	DK4	47	B	U	O		1		-00	.005		B								S		U	P
SL47-0247	DK4	47	W	D	O		2		-00	.005	.008	B								X		U	P
SL47-0248	DK4	47	W	D	O		1		-00	.005	.009	B								X		U	P
SL47-0249	DK4	47	B	U	O		5		-00	.005		CB		L								U	A
SL47-0250	DK4	47	W	D	O	W	2		-00	.005	.008	CB				C				S		U	A
SL47-0251	DK4	47	B	U	U		U		-00	.005		BD								X		U	P
SL47-0252	DK4	47	B	U	U		5		-00	.005		D		G								U	A
SL47-0253	DK4	47	W	D	O		2		-00	.005	.008	B				A				X		U	P
SL47-0254	DK4	47	B		S		2		-00	.005		B										U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL47-0255	DK4	47	W		M		3		-00	.005	.007	B				B				X		U	A
SL47-0256	DK4	47	B	U	O		1		-00	.005		B								X		U	A
SL47-0257	DK4	47	B	U	O		5		-00	.005		CB		L						S		U	A
SL47-0258	DK4	47	B	U	O		1		-00	.005		CD								X		U	P
SL47-0259	DK4	47	B	U	O		1		-00	.005		DB								X		U	P
SL47-0260	DK4	47	W		S		3		-00	.005	.007	CB				A						U	A
SL47-0261	DK4	47	B	U	O		1		-00	.005		B				F						U	A
SL47-0262	DK4	47	W	D	O	W	3	N	-00	.005	.007	B										U	A
SL47-0263	DK4	47	W	D	O		1		-00	.005	.009	B								X		U	A
SL47-0264	DK4	47	B	U	O	W	3		-00	.005		D				4				X		U	P
SL47-0265	DK4	47	B	U	O		1		-00	.005		C								S		U	P
SL47-0266	DK4	47	B		S		5		-00	.005		CB		L						X		U	P
SL47-0267	DK4	47	B	U	U		4		-00	.005		GB										U	P
SL47-0268	DK4	47	B	D	O		3		-00	.005		CD				J				X		U	A
SL47-0269	DK4	47	W	D	O		2		-00	.005	.008	CB								X		U	P
SL47-0270	DK4	47	W	D	O		4		-00	.005	.006	D				BC				S		U	P
SL47-0271	DK4	47	B	U	U		U		-00	.005		CD		G						X		U	A
SL47-0272	DK4	47	B	U	U		1		-00	.005		CB										U	P
SL47-0273	DK4	47	W		S		1		-00	.005	.009	CB								X		U	P
SL47-0274	DK4	47	B	U	O		3		-00	.005		CD				B				S		U	P
SL47-0275	DK4	47	B	U	O		5		-00	.005		CD				A						U	A
SL47-0276	DK4	47	B	D	O		1		-00	.005		B										U	P
SL47-0277	DK4	47	B	U	O		1		-00	.005		B								S		U	P
SL47-0278	DK4	47	W		M		3	N	-00	.005	.007	CB				B				X		U	P
SL47-0279	DK4	47	W	D	O		1		-00	.005	.009	B										U	A
SL47-0280	DK4	47	B	U	U		1		-00	.005		CB				C				S		U	A
SL47-0281	DK4	47	B	U	O		1		-00	.005		B								S		U	P
SL47-0282	DK4	47	W		M		5		-00	.005	.005	C		OS						X		U	A
SL47-0283	DK4	47	B		S		3		-00	.005		B										U	P
SL47-0284	DK4	47	W	D	O		1		-00	.005	.009	CD										U	A
SL47-0285	DK4	47	B	U	O		1		-00	.005		CD								S		U	P
SL47-0286	DK4	47	B	U	U		1		-00	.005		CD										U	P
SL47-0287	DK4	47	B	U	O		1		-00	.005		CD										U	A
SL47-0288	DK4	47	W	D	O		2		-00	.005	.008	B								X		U	P
SL47-0289	DK4	47	W		S		1		-00	.005	.009	B								X		U	P
SL47-0290	DK4	47	B		M		1		-00	.005		CB				I						U	A
SL47-0291	DK4	47	W	D	O	W	5		-00	.005	.005	CD								X		U	A
SL47-0292	DK4	47	W	D	O		3		-00	.005	.007	CB				B						U	P
SL47-0293	DK4	47	W	D	O	W	3		-00	.005	.007	B	D			C				X		U	P
SL47-0294	DK4	47	W		M		5		-00	.005	.005	CB		O		I						U	A
SL47-0295	DK4	47	B	U	O		4		-00	.005		CB				J				S		U	P
SL47-0296	DK4	47	B	U	O		1		-00	.005		CD								S		U	P
SL47-0297	DK4	47	B	U	O		U		-00	.005		D		G								U	P
SL47-0298	DK4	47	B	U	O		4		-00	.005		CD				B4				X		U	P
SL47-0299	DK4	47	W		S		1		-00	.005	.009	CB								X		U	P
SL47-0300	DK4	47	B	U	O		4		-00	.005		CB								S		U	A
SL47-0301	DK4	47	B	U	O		U		-00	.005		CD				C6				S		U	P
SL47-0302	DK4	47	W		S		2		-00	.005	.008	CB								S		U	P
SL47-0303	DK4	47	B	U	U		1		-00	.005		CD								X		U	P
SL47-0304	DK4	47	B	U	O		3		-00	.005		CB								X		U	P
SL47-0305	DK4	47	W		M		5		-00	.005	.005	CD				C				S		U	A
SL47-0306	DK4	47	W	D	O	W	5		-00	.005	.005	B		KL		A						U	P
SL47-0307	DK4	47	B	U	O		1		-00	.005		D								X		U	P
SL47-0308	DK4	47	B		S		1		-00	.005		CB								S		U	P
SL47-0309	DK4	47	B		M		3		-00	.005		D				C				S		U	P
SL47-0310	DK4	47	B	U	U		5		-00	.005		D		G		A				X		U	A
SL56-0001	DK5	56	W		S	O	4		+00	.008	.009	B		OSL			C	O		X		E?	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL40-0112	DK6	40	B	F	O		4		+00	.008		CD					C			S		U	P
SL40-0113	DK6	40	W	D	O		2		+00	.008	.012	AB			L							U	P
SL40-0114	DK6	40	B	U	O		1		+00	.008		B				6						U	A
SL40-0115	DK6	40	W	D	O		1		+00	.008	.015	B										U	A
SL40-0116	DK6	40	B		M		1		+00	.008		CB				C6						U	A
SL40-0117	DK6	40	B	U	O		2		+00	.008		B				6						U	A
SL40-0118	DK6	40	W	D	O		2		-00	.005	.008	CB				B				X		U	A
SL40-0119	DK6	40	B	D	O		4		-00	.005		CB				B56				S	X	U	A
SL40-0120	DK6	40	W		M		5		-00	.005	.005	DB	CB	L						X		U	P
SL40-0121	DK6	40	W	F	O	W	4		-00	.005	.006	C				CJ						U	A
SL40-0122	DK6	40	W	Q	O		3		-00	.005	.007	B				B				X		U	P
SL40-0123	DK6	40	B	D	O		2		-00	.005		B				C				X		U	P
SL40-0124	DK6	40	B		S		1		-00	.005		GB				C				X		U	P
SL40-0125	DK6	40	B	D	O		5		-00	.005		CD				5				X		U	P
SL40-0126	DK6	40	B		S		U		-00	.005		YB								X		U	P
SL40-0127	DK6	40	W	D	O		1		-00	.005	.009	YB			L	CJ				S		U	A
SL40-0128	DK6	40	B	D	O		1		-00	.005		GB								X		U	P
SL40-0129	DK6	40	W		M		2		-00	.005	.008	C				I				X		U	A
SL40-0130	DK6	40	B	D	O		1		-00	.005		CB				5				X		U	P
SL40-0131	DK6	40	W	F	O		3		-00	.005	.007	CB				B				S		U	P
SL40-0132	DK6	40	W		M		5		-00	.005	.005	CD		G		AI						U	A
SL40-0133	DK6	40	W	D	O		1		-00	.005	.009	B								X		U	P
SL40-0134	DK6	40	B	D	O		3		-00	.005		CB				BC						U	P
SL40-0135	DK6	40	B	D	O		4		-00	.005		B		L								U	A
SL40-0136	DK6	40	B	U	U		5		-00	.005		CB	B			C				S		U	P
SL40-0137	DK6	40	B	U	U		U		-00	.005		CB										U	P
SL40-0138	DK6	40	W	D	O		3	N	-00	.005	.007	CB				A				X		U	A
SL40-0139	DK6	40	B		M		U		-00	.005		B				I						U	P
SL40-0140	DK6	40	B		S		3		-00	.005		GB								X		U	P
SL40-0141	DK6	40	B	U	U		U		-00	.005		CB										U	P
SL40-0142	DK6	40	W	D	O		1		-00	.005	.009	B								S		U	A
SL40-0143	DK6	40	B	U	O		5		-00	.005		CB		L						X		U	P
SL40-0144	DK6	40	B	U	O		1		-00	.005		CB				45						U	P
SL40-0145	DK6	40	B	U	O		5		-00	.005		CB		L						S		U	P
SL40-0146	DK6	40	W	D	O		1		-00	.005	.009	B										U	P
SL40-0147	DK6	40	B	D	O		3		-00	.005		CB				J6				X		U	P
SL40-0148	DK6	40	U	U	U		1		-00	.005		B								X		U	P
SL40-0149	DK6	40	B	D	O		5		-00	.005		B		LI								U	P
SL40-0150	DK6	40	B	U	O	W	4		-00	.005		B		L		C				S		U	P
SL40-0151	DK6	40	B	U	U		U		-00	.005		CB								X		U	P
SL40-0152	DK6	40	B		S		3		-00	.005		B				C				X		U	P
SL40-0153	DK6	40	W	D	O		2	N	-00	.005	.008	B				BC				S		U	P
SL40-0154	DK6	40	B	U	O	W	1		-00	.005		B				5						U	P
SL40-0155	DK6	40	W	D	O	C	3		-00	.005	.007	P			L	CDF				X		U	A
SL40-0156	DK6	40	W	D	O		1		-00	.005	.009	GB										U	P
SL40-0157	DK6	40	B	D	O		5		-00	.005		B	CB	KLG		C				X		U	P
SL40-0158	DK6	40	W	D	O		4		-00	.005	.006	YB				C						U	P
SL40-0159	DK6	40	B	D	O		2		-00	.005		C										U	A
SL40-0160	DK6	40	B	D	O		3		-00	.005		CB				C				X		U	P
SL40-0161	DK6	40	B	U	O	W	5		-00	.005		B				C						U	A
SL40-0162	DK6	40	B	U	O		1		-00	.005		GB								S		U	P
SL40-0163	DK6	40	B	D	O		1		-00	.005		B				C45				S		U	A
SL40-0164	DK6	40	W		S		4		-00	.005	.006	GB								S	X	U	P
SL40-0165	DK6	40	W	D	O	W	3		-00	.005	.007	CB				C				S		U	P
SL40-0166	DK6	40	W		S		1		-00	.005	.009	CB										U	A
SL40-0167	DK6	40	B	D	O	W	5		-00	.005		DB	GB	OLG		C				X		U	P
SL40-0168	DK6	40	W	D	O	W	1		-00	.005	.009	B				H				X		U	P

APPENDIX II -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - REPRESENTATIVE SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER	T1	T2	T3	O1	O2	PA	2D
SL40-0169	DK6	40	W	D	O		3	N	-00	.005	.007	B				C				S		U	A
SL40-0170	DK6	40	B	D	O		1		-00	.005		B								X		U	P
SL40-0171	DK8	40	B	D	O		5		-00	.005		CD		K		A				X		U	P
SL40-0172	DK6	40	W	D	O	W	1		-00	.005	.009	D				H				X		U	P
SL40-0173	DK6	40	B	U	O		1		-00	.005		B								X		U	P
SL40-0174	DK6	40	B	U	O		4		-00	.005		C				BC4				S		U	A
SL40-0175	DK6	40	B	U	O		1		-00	.005		DB				C				X	S	U	P
SL40-0176	DK6	40	W	D	O		1		-00	.005	.009	CB		N						S		U	P
SL40-0177	DK6	40	B	U	U		U		-00	.005		B				C				X		U	P
SL40-0178	DK6	40	W	D	O	W	4		-00	.005	.006	CB		L						X		U	P
SL40-0179	DK8	40	B	U	U		U		-00	.005		CD								X		U	P
SL40-0180	DK6	40	B	D	O		1		-00	.005		B				C				S		U	P
SL40-0181	DK8	40	W	D	O		2	N	-00	.005	.008	C								S		U	A
SL40-0181A	DK6	40	B	D	O		4		-00	.005		B	CB			C				X		U	P
SL40-0182	DK6	40	B	U	O		1		-00	.005		CB				6				S		U	P
SL40-0183	DK8	40	B	U	O		1		-00	.005		CB								S		U	P
SL40-0184	DK6	40	W	D	O		1		-00	.005	.009	C								X		U	A
SL40-0185	DK6	40	B	U	O		4		-00	.005		YB				5				S		U	P
SL40-0186	DK8	40	W	D	O		1		-00	.005	.009	CD										U	A
SL40-0187	DK6	40	B	U	O	W	5		-00	.005		GB		G		C				X		U	P
SL40-0188	DK6	40	W	D	O		1		-00	.005	.009	CB										U	P
SL40-0189	DK6	40	B		S		5		-00	.005		B	CB	L						X		U	P
SL40-0190	DK6	40	B	U	O		2		-00	.005		B				C5				X		U	P
SL40-0191	DK6	40	W	D	O		1		-00	.005	.009	CB								X		U	P
SL40-0192	DK6	40	B	U	O		1		-00	.005		B								X		U	P
SL40-0193	DK6	40	B	U	O		3		-00	.005		DB				BC				S	X	U	P
SL40-0194	DK6	40	B	U	O		5		-00	.005		BD		L		5						U	P
SL40-0195	DK8	40	B	U	O		2		-00	.005		B								S		U	A
SL40-0196	DK6	40	W	D	O		3	N	-00	.005	.007	C				C				X		U	A
SL40-0197	DK8	40	B	U	O		1		-00	.005		B				C6						U	P
SL40-0198	DK6	40	W	D	O		1		-00	.005	.009	CP				C						U	A
SL40-0199	DK6	40	W	F	O		3		-00	.005	.007	CB					C			S	X	U	P
SL40-0200	DK6	40	B	U	O		1		-00	.005		CB				6				X		U	P
SL40-0201	DK6	40	W	D	O		4	N	-00	.005	.006	CB		KLG								U	P
SL40-0202	DK6	40	W	D	O	W	2		-00	.005	.008	CD				C				S		U	A
SL40-0203	DK6	40	W		S		4		-00	.005	.006	B	CB							S		U	P
SL40-0204	DK6	40	B	U	O		5		-00	.005		CB		K		4				S		U	P
SL40-0205	DK6	40	W	D	O		1		-00	.005	.009	GB				C				X		U	P
SL40-0206	DK8	40	W	D	O		2	N	-00	.005	.008	B	CB			C	C			S		U	A
SL40-0207	DK8	40	B	U	O	W	2		-00	.005		DB				C				X		U	P
SL40-0208	DK6	40	B	U	O	W	3		-00	.005		DB				B				X		U	P
SL40-0209	DK6	40	B	U	O		3		-00	.005		CB								S		U	A
SL40-0210	DK6	40	B	U	U		1		-00	.005		CB				C						U	A
SL40-0211	DK6	40	B	U	O		3		-00	.005		B								X		U	P
SL40-0212	DK6	40	W	D	O		1		-00	.005	.009	CB										U	A
SL40-0213	DK6	40	B	U	O	W	U		-00	.005		B	CB									U	P
SL40-0214	DK6	40	B	U	O		2		-00	.005		B								X		U	P
SL40-0215	DK6	40	B	U	O		1		-00	.005		CB			L	C56				S		U	P
SL40-0216	DK6	40	B		S		4		-00	.005		GB	D			C				S		U	P
SL40-0217	DK6	40	B	U	O		3		-00	.005		B				CD				X		U	P

APPENDIX III

PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS (SELECTED SAMPLE)

The physical characteristics described on the Selected sample of Sloan diamonds are tabulated here. The diamonds are grouped by sample number. The column headings are as outlined in Appendix II. Inclusion characteristics, however, are not listed here as they are listed in Appendix VII.

APPENDIX III -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - SELECTED SAMPLE

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER
SL0002	DK2	28	B		S		3			.005		B				A
SL0004	DK2	28	B	U	O		4			.005		B				
SL0006	DK2	28	B	U	O		4			.010		CB				A
SL0007	DK2	28	W	D	O		5			.005	.005	CB		I		
SL0011	DK4	48	B	U	O		2			.010		D				
SL0019	?		B	U	O		1			.020		CB				5
SL0021	?		W	D	O		2			.010	.015	D		I		BC
SL01-02	DK3	32	B	D	O		4			.050		YB				AC
SL01-04	DK3	33	B	U	O		1			.110		C			L	DK
SL01-06A	DK3	33	B		S		3			.040		YB		I		C
SL01-06B	DK3	33	W	D	O		4			.030	.035	C				B
SL01-07	DK3	34	B	U	O		3			.190		C				CD4
SL01-09	DK3	34	B	U	O		4			.020		YB				BC
SL01-10	DK4	39	B		S		2			.150		CB				
SL01-11	DK4	39	B	D	O		3			.080		CB		KG		AB
SL01-14	DK4	46	B	U	O		4			.060		CB				CD
SL01-15	DK4	47	W	D	O		4			.120	.140	C				CD
SL01-16	DK4	47	W		M		2			.060	.090	D				CI
SL01-17	DK4	48	W		S		3	N		.350	.470	C		L		A
SL01-19	DK4	48	W	D	O		3			.190	.250	CB		I		A
SL01-21	DK4	48	W	Q	O		1			.060	.110	C				
SL01-22	DK4	48	W	D	O		3			.100	.130	C				AC
SL01-23	DK4	48	B	U	O		1			.050		YB				
SL05-0004	DK2	05	W		M		3		+7	.063	.084	C				BCI
SL08-0003	DK2	08	B	U	O		5		+8	.040		C		L		A57
SL20-0001B	DK2	20	B	D	O		3		+5	.028		C				BC45
SL24-0005	DK2	24	B	D	O		5		+0	.010		B	C	KLG		
SL27-0006	DK2	27	W		M		4		-00	.003	.004	CB		N		CIY
SL30-0001H	DK2	30	B		S	O	1		+8	.049		C				56
SL41-0001	DK4	41	B	U	O	W	3		+2	.016		CB				BCK456
SL45-0003	DK4	45	W	F	O		4		+5	.030	.035	B				ABC
SL45-0006	DK4	45	B	U	O		5		+2	.009		CB		L		5
SL45-0007	DK4	45	W	D	O		3	N	-00	.005	.007	B		LN		
SL46-0005	DK4	46	W	D	O		4		+00	.009	.011	B		LN		C
SL47-0004	DK4	47	W		M		5		-00	.004	.004	C		OSN		
SL56-0006	DK5	56	U		M		5		+6	.038		CD		KNG		AI
SL56-0007	DK5	56	B	U	U		U		+10	.110		DB		KG		A45
SL56-0008	DK5	56	U		S		U		+11	.128		CD		KLNG		A
SLA002	DK2	19	W	D	O		3	N		.010	.013	D				C
SLA003	DK3	33	W	D	O		4			.020	.024	B				AC
SLA004	DK3	33	B	D	O		4			.010		BY				A
SLA006	DK3	33	W		M		5			.005	.005	YB		OS		D
SLA007	DK3	33	W		S		5			.005	.005	D		OS		
SLA009	DK3	32	B	D	O		4			.010		B				A
SLA011	DK3	32	W	D	O		4			.010	.012	CB				AD
SLA012	DK3	32	B	U	O		1			.010		B				C
SLA013	DK3	32	W	D	O		3	N		.040	.053	CB				A
SLA015	?		B	D	O		2			.010		C				56
SLA016	DK1	10	W		M		4			.005	.005	B				C
SLA017	DK1	10	B	U	O		3			.010		D				C6
SLA018	DK1	10	W		S		3			.005	.007	B				C
SLA022	DK1	10	W		S		4			.030	.035	D				AC
SLA023	DK3	36	W		S		5			.005	.005	B		OS		
SLA024	DK3	38	W	D	O		4			.005	.006	B				BC
SLA025	DK3	38	W		M		5			.005	.005	B				
SLA026	DK3	38	W	D	O		3			.010	.013	CD				C
SLA027	DK3	38	W	D	O		3			.010	.013	YB				BD

APPENDIX III -- PHYSICAL CHARACTERISTICS OF THE SLOAN DIAMONDS - SELECTED SAMPLE (cont.)

DIAMOND NO.	PHA	PT	ST	RG	MO	SM	RC	NU	SV	MASS	PRIM	CO	SC	XENO	DEF	OTHER
SLA028	DK3	38	W	D	O		4			.010	.012	B				C
SLA029	DK4	39	W	D	O		3			.020	.027	YB				BCD
SLA031	DK4	39	W	Q	O		4			.010	.012	B				BC
SLA032	DK4	39	B	U	O		3			.010		DB				D
SLA033	DK4	39	W	Q	O		4			.010	.012	D				AC
SLA034	DK4	39	W		M		5			.005	.005	D		OS		
SLA035	DK4	39	W	D	O		3			.010	.013	YB				BC
SLA037	DK4	45	W		S		5			.005	.005	B				
SLA038	DK4	45	W		S		3			.005	.007	YB				
SLA042	DK3	33	W		S		5			.030	.030	C		S		
SLA046	DK4	46	B	U	O		4			.040		CB				
SLA047	DK5	58	W	D	O		4			.020	.024	D				BC
SLA049	DK1	53	B	D	O		4			.010		YB				C
SLA052	DK5	58	W	D	O		3			.010	.013	CB				
SLA053	DK5	58	W	Q	O		4			.020	.024	D				B
SLA054	DK5	58	W	D	O		4			.020	.024	CB				BC
SLA055	DK2	25	W	D	O		2			.010	.015	D				C
SLA056	DK2	24	B	D	O		4			.010		D				C
SLA057	DK5	58	W		S		3	N		.010	.013	C				BC
SLA058	DK2	27	W		S		4			.005	.006	C				
SLA061	DK5	58	B	D	O		3	N		.010		B				CD
SLA062	DK5	59	W	D	O		5			.010	.010	YB				A
SLA063	DK5	59	B		M		4			.005		CB				
SLA064	DK5	59	W		M		4			.010	.012	CB				C
SLA065	DK5	59	W	D	O		4			.005	.006	CB				B
SLA066	DK5	59	B	D	O		4			.020		B				C
SLA087	DK5	59	W	Q	O		3	N		.010	.013	CB				
SLA068	DK5	59	B	D	O		2			.020		CB				C6
SLA069	DK5	59	W		S		5			.010	.010	CB				A
SLA070	DK2	24	B	U	O		1			.020		YB				56
SLA071	DK2	24	B	D	O		4			.020		B				C
SLA073	DK2	24	W	D	O		5			.030	.030	CB				A
SLA074	DK2	24	W		S		4			.010	.012	CB				A
SLA077	DK2	25	B	D	O		4			.010		CB				AC
SLA078	DK2	25	W		S		4			.010	.012	CB				
SLA080	DK2	25	W	D	O		1			.005	.009	CB				
SLA081	DK2	25	B		S		4			.020		CD				C
SLA087	SL5	32	W	D	O		4			.010	.012	CB				C
SLA088	SL5	51	W		S		4			.010	.012	CB				C
SLA089	SL5	52	W	D	O		3			.040	.053	CB				BC
SLA090	SL6	52	B	U	O		3			.020		CB				C6
SLA094	DK5	56	B	D	O		4			.020		CB				CD
SLA096	DK5	56	W	D	O		4			.010	.012	CB		L		B
SLA097	DK1	52	W	Q	O		4			.010	.012	B				C
SLA099	DK3	42	W	D	O		4	N		.010	.012	CB				C
SLA100	DK4	48	B	U	O		5			.010		C		O		

APPENDIX IV

INCLUSION DESCRIPTION SCHEME

The following inclusion description method was developed during the course of this study and is useful for describing inclusions during the inclusion recovery process.

Just prior to diamond cracking, all inclusions are described in detail. Especially important to note are their association with fractures to the diamond surface and their orientation with respect to the diamond's crystal axes. Upon recovery, the inclusions are re-described and, if possible, related to specific inclusions described before diamond cracking. It should be noted whether the recovered inclusion was seen in the diamond. The whole process should be repeated on remaining inclusion-bearing diamond fragments until all inclusions have been recovered.

APPENDIX IV

CATEGORY	EXPLANATION	POSSIBLE ENTRIES
Break number	Sequential account of number of times the diamond is broken for recovery of all significant inclusions	
Inclusion number	Sequential account of inclusions as described in visual assessment	
Sample number	Number of each mounted inclusion grain; (recovered assessment only)	
Orientation	With respect to diamond's crystal axes; (visual assessment only)	Epitaxial Random
Fracture association	Whether the inclusion is associated with fractures in the diamond	None - no fractures Rosette - internal rosette fracture Surface - Fracture to diamond surface Not Seen - (recovered assessment only)
Size	In microns. At least two dimensions.	
Morphology		
Regularity	General shape of inclusion	Equidimensional Elongate Flat or tabular
Angularity	Flatness of crystal faces	Flat-faced Curve-faced
Form	Crystal form	Octahedroid Cubo-octahedroid Sphere Ellipsoid Irregular Other
		Fragment } (recovered assessment only) Flake }

APPENDIX IV (cont.)

CATEGORY	EXPLANATION	POSSIBLE ENTRIES
Colour		
Transparency		Transparent Translucent (probably secondary) Opaque
Uniformity		Uniform Non-uniform (probably secondary)
Colour	Overall impression	Colourless (Olivine, Orthopyroxene, Coesite, Corundum, Sanadine) Purple (Garnet) Orange (Garnet) Green (Cr-diopside, Moissanite) Pale Green (Omphacite) Red (Garnet, Ruby) Amber (Garnet, Rutile) Blue (Kyanite) Brown (Zircon, Ferro-periclase) Opaque (Sulphide, Chromite, Ilmenite, Fe-metal) Other
Birefringence		Isotropic Semi-isotropic (probably secondary) Low order High order
Surface coating		Black spots Fe_2O_3 staining (probably secondary)
Preliminary Identification		
Type		Primary (Possibly protogenetic, syngenetic) Secondary
Mineral phase	See under "Colour"	
Paragenesis		Peridotitic Eclogitic
Final Identification		
Type		Primary (Possibly protogenetic, syngenetic) Secondary
Mineral Phase	Based on probe/XRD analysis	
Paragenesis		Peridotitic - Harzburgitic Lherzolitic Eclogitic - Websteritic Grospyditic Unknown

INCLUSION DESCRIPTION

DIAMOND NO. EXAMPLE

Break No.	Inclusion No.	Sample No.	Orientation	Fracture Association	Size (μm)	Morphology Regularity/Angularity/Form	Colour Transparency/Uniformity/Colour/ Birefringence/Surface coating	Preliminary Identification Type/Mineral/Paragenesis	Slide Status	Final Identification Type/Mineral/Paragenesis
VISUAL ASSESSMENT										
	1		EPITAXIAL	NONE	50×50×50	EQUIDIMENSIONAL, FLAT-FACED OCTA	TRANSPARENT, COLOURLESS HIGH ORDER BIRE. NO SURFACE IMPURITIES	SYNGENETIC, POSSIBLY OLIVINE, PERIDOTITIC		
	2		RANDOM	ROSETTE	60×70×20	TABULAR, FLAT-FACED CRYSTALLINE EYE	OPAQUE, BLACK	SYNGENETIC SULPHIDE		
	3		RANDOM	SURFACE	60×60×10	CURVE-FACED ELLIPSOID	TRANSLUCENT, NON-UNIF. ORANGE + BLACK COLOUR Fe_2O_3 STAINING	SECONDARY		
RECOVERED INCLUSION ASSESSMENT										
	1	EX1			50×50×50	AS INCLUSION 1	ABOVE		P/P	SYNGENETIC OPX HARZBURGITE
	2	EX2			30×40×20	TABULAR, FLAT-FACED FRAGMENT	OPAQUE, BRONZE LUSTER		P/P	SYNGENETIC PYRRHOTITE
	4	EX3		NOT SEEN	50×30×30	EQUIDIMENSIONAL CURVE-FACED SPHERE	TRANSPARENT, UNIFORM PURPLE, ISOTROPIC	PRIMARY PERIDOTITIC GARNET	P/P	HARZBURGITIC GARNET
	3	EX4			30×40×20	IRREGULAR, ANGULAR FLAKE	AS 3 ABOVE		P/P	SECONDARY, SERPENTINE

APPENDIX V

ANALYTICAL CONDITIONS FOR MICROPROBE ANALYSIS

Tables A-F list the standards used and the statistical machine limits calculated for the Cameca/Camebax Microbeam electron microprobe analyses reported in Appendix VI.

The elements analyzed in each mineral species are recorded. Where possible, standards with structures and compositions similar to unknowns were used in order to minimize correction factors. In general, counting periods of ten seconds were used. Longer counts were used on Na in garnet, K in clinopyroxene and Cr,Ni in olivine to increase precision.

The following instrumental conditions were used:

Beam current: 40nA
Accelerating voltage: 15kV
Beam size: 5-10 microns
Analyzing crystals: TLAP - Na,Mg,Si,Al
LIF200 - Fe,Mn,Ni,Zn,Cu,Co
PET - Ca,K,Ti,Cr,S

Reduction of all data was performed on-line. Raw counts were corrected for dead time and background, and nominal concentrations were calculated from the standard K-factors. These nominal concentrations were corrected using ZAF correction factors (modified after Henoc et al., 1973).

Counting statistics are a measure of precision which is largely dependent on the measurement of background intensity. By increasing counting time, the error in this measurement is reduced. The counting statistics reported here are the lower limit of detection (l.l.d.) and standard deviation (2σ). The l.l.d. is independent of concentration and for 99% confidence limits is given by :

$$\text{l.l.d.} = \frac{6\sqrt{Rb}}{m\sqrt{T}}$$

$m = R_p - R_b \div (wt\%)$
$T = T_p - T_b$
R_p = counts/second on peak
R_b = counts/second on background
T_p = time on peak (seconds)
T_b = time on background (seconds)

It can be seen that increasing the counting time (T) lowers the detection limit.

Standard deviation is reported as 2σ (95% confidence limits) which is defined as:

$$2\sigma = 2 \times \left(\frac{\frac{R_p}{T_p} \times \frac{R_b}{T_b}}{R_p - R_b} \right) \times wt\%$$

Since 2σ is concentration dependent, it is listed for a range of compositions encountered in this study.

APPENDIX V - TABLE A
GARNET

EL	STANDARD	Wt.% OXIDE (STANDARD)	COUNTING TIME(sec)	LLD	Wt.% OXIDE (UNKNOWN)	2σ
Si	Kakanui Pyrope	41.46 SiO_2	10	.04	40.00 SiO_2	.24
Ti	Synthetic Rutile	100.00 TiO_2	10	.04	0.50 TiO_2	.04
Al	Kakanui Pyrope	23.73 Al_2O_3	10	.03	21.00 Al_2O_3	.18
Cr	Chromite 52NL11	44.50 Cr_2O_3	10	.05	0.10 Cr_2O_3 8.60 "	.03 .12
Fe	Kakanui Pyrope	10.68 FeO	10	.08	6.00 FeO 25.00 "	.25 .41
Mn	Rhodonite	40.76 MnO	10	.07	0.60 MnO	.08
Mg	Kakanui Pyrope	18.50	10	.03	15.00 MgO	.14
Ca	Kakanui Pyrope	5.16 CaO	10	.03	8.00 CaO	.12
Na	Kakanui Hornblende	2.60 Na_2O	30	.02	0.15 Na_2O	.02

APPENDIX V - TABLE B

PYROXENE, KYANITE, ZIRCON, COESITE

EL	STANDARD	Wt.% OXIDE (STANDARD)	COUNTING TIME(sec)	LLD	Wt.% OXIDE (UNKNOWN)	2σ
Si	Synthetic Diopside	55.47 SiO_2	10	.04	55.00 SiO_2 98.00 "	.27 .33
Ti	Synthetic Rutile	100.00 TiO_2	10	.04	0.60 TiO_2	.04
Al	Kakanui Pyrope	23.73 Al_2O_3	10	.03	0.80 Al_2O_3 12.00 "	.04 .10
Cr	Chromite 52N111	44.50 Cr_2O_3	10	.04	0.40 Cr_2O_3	.04
Fe	Kakanui Pyrope	10.68 FeO	10	.08	6.00 FeO	.22
Mn	Rhodonite	40.76 MnO	10	.06	0.15 MnO	.05
Mg	Synthetic Diopside	18.62 MgO	10	.03	8.00 MgO 35.00 "	.11 .20
Ca	Synthetic Diopside	25.90 CaO	10	.02	1.20 CaO 25.00 "	.04 .22
Na	Kakanui Hornblende	2.60 Na_2O	10	.03	0.20 Na_2O 6.00 "	.03 .11
K	Kakanui	2.05 K_2O	30	.01	0.40 K_2O	.02

APPENDIX V - TABLE C

OLIVINE

EL	STANDARD	Wt.% OXIDE (STANDARD)	COUNTING TIME(sec)	LLD	Wt.% OXIDE (UNKNOWN)	2σ
Si	Marjalahti Olivine	40.24 SiO_2	10	.04	41.00 SiO_2	.24
Ti	Synthetic Rutile	100.00 TiO_2	10	.04	ND	ND
Al	Kakanui Pyrope	23.73 Al_2O_3	10	.03	0.08 Al_2O_3	.02
Cr	Chromite 52NL11	44.50 Cr_2O_3	30	.02	0.12 Cr_2O_3	.02
Fe	Marjalahti Olivine	11.53 FeO	10	.07	7.50 FeO	.23
Mn	Rhodonite	40.76 MnO	10	.06	0.11 MnO	.05
Mg	Marjalahti Olivine	48.08 MgO	10	.03	50.50 MgO	.24
Ca	Kakanui Pyrope	5.16 CaO	10	.03	0.15 CaO	.02
Ni	Synthetic Ni_2SO_4	71.32 NiO	30	.05	0.30 NiO	.04

APPENDIX V - TABLE D

RUTILE, CORUNDUM, FE-PERICLASE, ILMENITE, MAGNETITE

EL	STANDARD	Wt.% OXIDE (STANDARD)	COUNTING TIME(sec)	LLD	Wt.% OXIDE (UNKNOWN)	2σ
Si	Kakanui Pyrope	41.46 SiO_2	10	.04	ND	ND
Ti	Synthetic Rutile	100.00 TiO_2	10	.04	1.00 TiO_2	.05
					50.00 "	.29
					98.00 "	.40
Al	Chromite 52NL11	19.41 Al_2O_3	10	.03	0.10 Al_2O_3	.02
					12.00 "	.13
					98.00 "	.30
Cr	Chromite 52NL11	44.50 Cr_2O_3	10	.04	0.80 Cr_2O_3	.05
					56.00 "	.31
Fe	Ilmenite (Ilm. Mts. USSR)	46.53 FeO*	10	.08	0.40 FeO*	.08
					20.00 "	.36
					40.00 "	.50
Mn	Rhodonite	40.76 MnO	10	.07	0.30 MnO	.06
Mg	Chromite 52N111	12.30 MgO	10	.04	10.00 MgO	.13
					80.00 "	.31
Ca	Synthetic	25.90 CaO	10	.03	0.10 CaO	.02

FeO* = Total Iron

APPENDIX V - TABLE E

K-FELDSPAR

EL	STANDARD	Wt.% OXIDE (STANDARD)	COUNTING TIME(sec)	LLD	Wt.% OXIDE (UNKNOWN)	2σ
Si	Nunivak Is. Plagioclase	66.10 SiO_2	10	.06	65.00 SiO_2	.39
Al	Nunivak Is. Plagioclase	19.90 Al_2O_3	10	.04	18.00 Al_2O_3	.19
Fe	Kakanui Hornblende	10.92 FeO	10	.11	ND	ND
Mg	Kakanui Hornblende	12.80 MgO	10	.03	ND	ND
Ca	Labradorite Lake Co., Oregon	13.24 CaO	10	.04	ND	ND
Na	Nunivak Is. Plagioclase	8.40 Na_2O	10	.03	0.30 Na_2O	.04
K	OR-1	14.92 K_2O	10	.03	17.00 K_2O	.23

APPENDIX V - TABLE F

SULPHIDE

EL	STANDARD	Wt.% ELEMENT (STANDARD)	COUNTING TIME(sec)	LLD	Wt.% ELEMENT (UNKNOWN)	2σ
Fe	SM-3 Troilite	63.20 Fe	10	.08	61.00 Fe	.52
Ni	Synthetic Ni_2SO_4	56.04 Ni	10	.09	0.28 Ni	.07
Cr	Chromite 52NL11	30.45 Cr	10	.06	ND	ND
Co	Cobalt Metal	100.00 Co	10	.09	ND	ND
Cu	Chalco -pyrite	34.63 Cu	10	.13	0.30 Cu	.10
S	SM-3 Troilite	36.32 S	10	.03	39.00 S	.31
Zn	Sphalerite	67.00 Zn	10	.14	ND	ND

APPENDIX VI

INCLUSION AND XENOLITH MINERAL ANALYSES

The microprobe analyses for primary minerals found in Sloan diamonds are grouped as follows:

TABLE A - GARNET INCLUSIONS
B - CLINOPYROXENE INCLUSIONS
C - OLIVINE INCLUSIONS
D - ORTHOPYROXENE INCLUSIONS
E - OTHER SILICATE INCLUSIONS
F - RUTILE INCLUSIONS
G - OTHER OXIDE INCLUSIONS
H - SULPHIDE INCLUSIONS
I - OTHER POSSIBLY PRIMARY INCLUSIONS
J - DIAMONDIFEROUS ECLOGITE MINERALS FROM SLOAN
K - DIAMONDIFEROUS PERIDOTITE MINERALS FROM SCHAFFER

Table I lists minerals recovered which may be primary, but which were not confirmed as being unassociated with fractures to the diamond surface. In most cases each analysis represents an average of three analyses per grain, or of multiple grains from the same diamond if their composition agreed within machine error. Only in two cases were similar minerals with differing compositions found in a single diamond: A46 (garnet) and 1-15 (clinopyroxene).

The following symbols are used in this data set:

ND = below detection limit
\- = not analyzed
() = inhomogeneous element

C = Ca/(Ca+Mg+Fe)
M = Mg/(Ca+Mg+Fe)
F = Fe/(Ca+Mg+Fe)

FO = Forsterite
FA = Fayalite

AN = Anorthite
AB = Albite
OR = Orthoclase

APPENDIX VI - TABLE A
GARNET INCLUSIONS

	1	2	3	4	5	6	7	8	9	10
SIO2	39.8	39.5	38.9	39.7	40.0	40.9	39.6	38.6	38.2	41.1
TIO2	.41	.45	.47	.48	.49	.65	.52	.48	.51	.14
AL2O3	22.4	22.4	21.8	22.2	22.2	22.4	21.8	22.0	22.4	17.3
CR2O3	.07	ND	ND	.14	ND	ND	.08	ND	ND	8.64
FEO	18.7	19.0	22.4	17.3	17.9	15.0	17.8	20.1	19.5	5.90
MNO	.40	.38	1.42	.42	.59	.47	.32	.37	.33	.24
MGO	10.3	8.65	8.12	10.1	12.7	16.5	11.8	7.84	8.84	20.5
CAO	8.33	9.52	6.58	9.66	6.06	3.49	7.43	9.87	9.86	6.00
NA2O	.18	.15	.20	.23	.14	.18	.17	.25	.22	ND
TOTAL	100.59	100.05	99.89	100.23	100.08	99.59	99.52	99.51	99.86	99.82

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	12	12	12	12	12	12	12	12	12	12
SI	2.979	2.986	2.986	2.978	2.981	2.996	2.979	2.961	2.914	2.982
TI	.023	.026	.027	.027	.027	.036	.029	.028	.029	.008
AL	1.976	1.996	1.972	1.963	1.950	1.934	1.933	1.989	2.014	1.480
CR	.004	-	-	.008	-	-	.005	-	-	.496
FE2+	1.171	1.201	1.438	1.085	1.116	.919	1.120	1.289	1.244	.358
MN	.025	.024	.092	.027	.037	.029	.020	.024	.021	.015
MG	1.149	.975	.929	1.129	1.410	1.801	1.323	.896	1.005	2.217
CA	.668	.771	.541	.776	.484	.274	.599	.811	.806	.467
NA	.026	.022	.030	.033	.020	.026	.025	.037	.033	-
SUM	8.021	8.001	8.015	8.026	8.026	8.014	8.034	8.036	8.066	8.023
C	22.36	26.17	18.61	25.96	16.08	9.15	19.69	27.07	26.38	15.34
M	38.46	33.07	31.94	37.75	46.86	60.16	43.49	29.91	32.90	72.89
F	39.18	40.76	49.45	36.29	37.06	30.69	36.82	43.03	40.72	11.77
MG/MG+FE	49.53	44.79	39.25	50.99	55.84	66.22	54.16	41.01	44.69	86.10

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL 6	6	SL 1-15
2	SL 1-6A	7	SL 1-23
3	SL 1-6B	8	SL A3
4	SL 1-9	9	SL A4
5	SL 1-10	10	SL A12

APPENDIX VI - TABLE A (cont.)
GARNET INCLUSIONS

	11	12	13	14	15	16	17	18	19	20
SIO2	38.8	39.4	39.1	40.0	39.4	38.6	38.9	38.8	39.3	39.4
TIO2	.53	.39	.46	.36	.46	.44	.76	.51	.45	.44
AL2O3	21.6	22.4	22.5	22.8	22.1	22.2	21.1	21.0	22.3	22.2
CR2O3	ND	ND	ND	.13	.06	ND	ND	ND	ND	.12
FEO	18.4	18.1	19.0	15.5	19.6	19.5	18.6	19.1	18.6	18.4
MNO	.36	.34	.38	.28	.91	.40	.39	.44	.31	.42
MGO	7.94	9.36	8.68	12.2	10.7	8.71	8.33	7.48	8.91	10.6
CAO	12.0	9.40	10.0	8.42	6.81	9.61	11.4	11.9	9.98	8.67
NA2O	.20	.16	.20	.18	.15	.19	.18	.14	.23	.15
TOTAL	99.83	99.55	100.32	99.87	100.19	99.65	99.66	99.37	100.08	100.40

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	12	12	12	12	12	12	12	12	12	12
SI	2.962	2.981	2.956	2.971	2.970	2.946	2.974	2.987	2.971	2.958
TI	.030	.022	.026	.020	.026	.025	.044	.030	.026	.025
AL	1.944	1.998	2.005	1.996	1.964	1.997	1.902	1.905	1.987	1.965
CR	-	-	-	.008	.004	-	-	-	-	.007
FE2+	1.175	1.145	1.201	.963	1.236	1.245	1.189	1.230	1.176	1.155
MN	.023	.022	.024	.018	.058	.026	.025	.029	.020	.027
MG	.903	1.055	.978	1.350	1.202	.991	.949	.858	1.004	1.186
CA	.982	.762	.810	.670	.550	.786	.934	.982	.808	.697
NA	.030	.023	.029	.026	.022	.028	.027	.021	.034	.022
SUM	8.050	8.009	8.030	8.021	8.031	8.044	8.044	8.041	8.026	8.042
C	32.08	25.72	27.10	22.46	18.41	26.01	30.40	31.98	27.05	22.95
M	29.52	35.62	32.72	45.27	40.23	32.79	30.89	27.96	33.59	39.03
F	38.39	38.66	40.19	32.27	41.36	41.20	38.71	40.06	39.35	38.02
MG/MG+FE	43.47	47.96	44.88	58.38	49.31	44.32	44.38	41.10	46.05	50.66

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
11	SL A22	16	SL A37
12	SL A24	17	SL A46-1
13	SL A27	18	SL A46-2
14	SL A31	19	SL A57
15	SL A33	20	SL A62

APPENDIX VI - TABLE A (cont.)
GARNET INCLUSIONS

	21	22	23	24	25	26	27	28	29	30
SIO2	39.4	39.3	38.6	38.9	40.4	39.5	39.1	39.8	40.0	39.5
TIO2	.41	.37	.45	.28	.29	.36	.54	.54	.61	.24
AL2O3	22.6	22.3	22.4	21.4	22.5	22.6	21.7	21.8	21.6	22.7
CR2O3	ND	ND	ND	ND	.06	ND	.06	ND	ND	ND
FEO	16.4	18.4	19.5	24.6	14.0	17.6	22.1	19.1	18.5	23.5
MNO	.27	.34	.42	1.41	.34	.26	.73	.44	.41	.68
MGO	9.66	11.2	8.18	7.79	14.6	9.63	8.20	9.38	9.51	10.3
CAO	10.6	7.38	10.3	5.58	7.55	9.41	7.86	9.15	9.17	3.14
NA2O	.18	.18	.23	.20	.16	.19	.18	.16	.23	.24
TOTAL	99.52	99.47	100.08	100.16	99.90	99.55	100.47	100.37	100.04	100.30

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	12	12	12	12	12	12	12	12	12	12
SI	2.969	2.965	2.939	3.000	2.973	2.980	2.982	2.999	3.015	2.987
TI	.023	.021	.026	.016	.016	.020	.031	.031	.035	.014
AL	2.007	1.983	2.010	1.945	1.951	2.010	1.950	1.936	1.920	2.023
CR	-	-	-	-	.003	-	.004	-	-	-
FE2+	1.033	1.161	1.242	1.586	.862	1.110	1.409	1.204	1.166	1.486
MN	.017	.022	.027	.092	.021	.017	.047	.028	.026	.044
MG	1.085	1.259	.928	.895	1.601	1.083	.932	1.053	1.068	1.161
CA	.856	.597	.840	.461	.595	.761	.642	.739	.741	.254
NA	.026	.026	.034	.030	.023	.028	.027	.023	.034	.035
SUM	8.017	8.035	8.047	8.026	8.045	8.009	8.024	8.014	8.006	8.005
C	28.78	19.78	27.92	15.67	19.47	25.75	21.53	24.66	24.89	8.77
M	36.47	41.74	30.84	30.42	52.36	36.65	31.23	35.16	35.91	40.01
F	34.75	38.48	41.25	53.91	28.17	37.59	47.24	40.18	39.20	51.22
MG/MG+FE	51.21	52.03	42.78	36.07	65.01	49.37	39.80	46.67	47.81	43.85

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
21	SL A65	26	SL A74
22	SL A66	27	SL A96
23	SL A67	28	SL 5-4
24	SL A68	29	SL 8-3
25	SL A73	30	SL 20-18

APPENDIX VI - TABLE A (cont.)
GARNET INCLUSIONS

	31	32	33	34	35
SIO2	41.5	39.3	39.6	39.9	39.7
TIO2	.18	.58	.62	.39	.43
AL2O3	15.8	21.8	22.2	22.3	22.4
CR2O3	10.1	ND	ND	ND	ND
FEO	6.00	19.9	19.6	19.1	19.6
MNO	.25	.64	.37	.29	.42
MGO	20.1	9.66	8.53	9.38	9.18
CAO	5.61	8.35	9.20	8.89	8.70
NA2O	ND	.12	.28	.18	.14
TOTAL	99.54	100.35	100.40	100.43	100.57

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	12	12	12	12	12
SI	3.029	2.972	2.990	2.998	2.986
TI	.010	.033	.035	.022	.024
AL	1.359	1.943	1.976	1.975	1.986
CR	.583	-	-	-	-
FE2+	.366	1.259	1.238	1.200	1.233
MN	.015	.041	.024	.018	.027
MG	2.187	1.089	.960	1.050	1.029
CA	.439	.677	.744	.716	.701
NA	-	.018	.041	.026	.020
SUM	7.990	8.032	8.007	8.006	8.007
C	14.67	22.38	25.30	24.13	23.66
M	73.09	36.00	32.63	35.41	34.73
F	12.24	41.62	42.07	40.46	41.61
MG/MG+FE	85.65	46.38	43.68	46.67	45.49

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
31	27-6		
32	30-1H		
33	41-1		
34	45-3		
35	45-7		

APPENDIX VI - TABLE B
CLINOPYROXENE INCLUSIONS

	1	2	3	4	5	6	7	8	9	10
SIO2	54.4	54.6	54.4	55.2	55.5	55.5	54.9	54.2	55.7	53.5
TIO2	.33	.31	.38	.60	.53	.35	.33	.35	.46	.34
AL2O3	5.58	5.93	7.02	6.33	4.30	4.84	5.84	7.98	9.77	5.63
CR2O3	ND	.05	ND	ND	ND	ND	ND	ND	ND	ND
FEO	6.74	5.28	5.25	7.00	4.62	5.74	5.28	5.81	5.49	6.93
MNO	.16	.07	.08	.20	.10	.14	ND	ND	.07	.08
MGO	13.4	12.8	11.4	14.2	16.0	14.5	12.1	10.4	8.81	11.2
CAO	15.8	17.2	17.2	12.5	16.5	16.1	18.2	16.2	13.6	18.2
NA2O	3.29	3.05	3.48	3.80	2.62	2.57	2.46	4.28	5.53	2.64
K2O	.43	.59	.60	.25	.11	.47	1.18	.33	.78	.76
TOTAL	100.13	99.88	99.81	100.08	100.28	100.21	100.29	99.55	100.21	99.28

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	6	6	6	6	6	6	6	6	6	6
SI	1.974	1.979	1.973	1.984	1.988	1.998	1.988	1.969	1.994	1.974
TI	.009	.008	.010	.016	.014	.009	.009	.010	.012	.009
AL	.239	.253	.300	.268	.182	.205	.249	.342	.412	.245
CR	-	.001	-	-	-	-	-	-	-	-
FE2+	.205	.160	.159	.210	.138	.173	.160	.177	.164	.214
MN	.005	.002	.002	.006	.003	.004	-	-	.002	.003
MG	.725	.691	.616	.761	.854	.778	.653	.563	.470	.616
CA	.614	.668	.668	.481	.633	.621	.706	.631	.522	.720
NA	.232	.214	.245	.265	.182	.179	.173	.302	.384	.189
K	.020	.027	.028	.011	.005	.022	.055	.015	.036	.036
SUM	4.023	4.006	4.003	4.004	4.000	3.990	3.992	4.009	3.997	4.006
C	39.80	43.96	46.29	33.14	38.95	39.51	46.49	46.02	45.12	46.44
M	46.95	45.50	42.68	52.37	52.54	49.49	42.99	41.09	40.66	39.75
F	13.25	10.53	11.03	14.49	8.51	10.99	10.53	12.88	14.22	13.80
MG/MG+FE	77.99	81.20	79.46	78.33	86.06	81.82	80.33	76.13	74.09	74.23
CA/CA+FE	45.88	49.14	52.03	38.76	42.58	44.39	51.96	52.83	52.60	53.88

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL 1-10	6	SL 1-16
2	SL 1-11	7	SL 1-22
3	SL 1-14	8	SL A9
4	SL 1-15-1	9	SL A37
5	SL 1-15-2	10	SL A49

APPENDIX VI - TABLE B (cont.)
CLINOPYROXENE INCLUSIONS

	11	12	13	14	15	16	17	18	19	20
SIO2	55.9	54.3	55.4	54.7	54.6	56.6	55.5	54.6	54.6	55.1
TIO2	.48	.41	.37	.05	.46	.41	.42	.38	.40	.47
AL2O3	11.0	7.48	9.92	.99	9.29	15.4	11.5	6.78	7.33	11.7
CR2O3	ND	ND	.06	1.29	.09	.06	ND	ND	ND	ND
FEO	5.11	4.82	3.12	2.72	5.58	2.83	4.13	6.08	5.82	4.60
MNO	ND	ND	ND	.11	ND	ND	ND	ND	ND	ND
MGO	8.06	11.2	10.4	19.9	9.32	6.04	8.67	10.8	10.7	8.34
CAO	12.3	16.9	14.3	18.9	14.3	9.12	13.1	16.6	16.0	12.6
NA2O	5.88	3.22	5.12	.65	4.87	8.11	5.78	3.68	3.74	5.96
K2O	.56	1.16	.55	.20	.86	.38	.63	.78	1.44	.77
TOTAL	99.29	99.49	99.24	99.51	99.37	98.95	99.73	99.70	100.03	99.54

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	6	6	6	6	6	6	6	6	6	6
SI	2.002	1.973	1.982	1.980	1.978	1.993	1.977	1.988	1.982	1.972
TI	.013	.011	.010	.001	.013	.011	.011	.010	.011	.013
AL	.464	.320	.418	.042	.397	.639	.483	.291	.314	.494
CR	-	-	.002	.037	.003	.002	-	-	-	-
FE2+	.153	.146	.093	.082	.169	.083	.123	.185	.177	.138
MN	-	-	-	.003	-	-	-	-	-	-
MG	.430	.606	.554	1.073	.503	.317	.460	.586	.579	.445
CA	.472	.658	.548	.733	.555	.344	.500	.648	.622	.483
NA	.408	.227	.355	.046	.342	.554	.399	.260	.263	.414
K	.026	.054	.025	.009	.040	.017	.029	.036	.067	.035
SUM	3.969	3.996	3.988	4.007	4.000	3.961	3.984	4.004	4.015	3.993
C	44.73	46.63	45.83	38.81	45.23	46.22	46.16	45.65	45.17	45.34
M	40.77	42.99	46.36	56.83	41.00	42.58	42.49	41.31	42.01	41.74
F	14.50	10.38	7.81	4.36	13.77	11.20	11.36	13.05	12.82	12.92
MG/MG+FE	73.76	80.55	85.59	92.88	74.85	79.18	78.91	75.99	76.61	76.36
CA/CA+MG	52.32	52.04	49.71	40.58	52.45	52.05	52.07	52.50	51.81	52.07

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
11	SL A52	16	SL A94
12	SL A71	17	SL A99
13	SL A73	18	SL 5-4
14	SL A78	19	SL 8-3
15	SL A80	20	SL 45-3

APPENDIX VI - TABLE B (cont.)
CLINOPYROXENE INCLUSIONS

	21
SIO2	55.2
TIO2	.43
AL2O3	9.10
CR2O3	ND
FEO	4.86
MNO	.08
MGO	10.6
CAO	14.9
NA2O	4.73
K2O	.44
TOTAL	100.34

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	6
SI	1.972
TI	.012
AL	.383
CR	-
FE2+	.145
MN	.002
MG	.564
CA	.571
NA	.328
K	.020
SUM	3.998
C	44.56
M	44.09
F	11.34
MG/MG+FE	79.54
CA/CA+MG	50.26

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
21	SL 46-5		

APPENDIX VI - TABLE C
OLIVINE INCLUSIONS

	1	2	3	4	5	6	7	8	9	10
SIO2	40.9	41.0	41.0	40.6	40.7	40.9	40.7	40.8	40.2	41.2
TIO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AL2O3	.04	.04	.05	.04	.04	.07	.04	.04	.12	.04
CR2O3	ND	.14	.12	.14	.10	.08	.10	.12	.10	ND
FEO	7.12	7.68	7.68	8.08	8.20	8.27	7.71	7.86	7.89	7.67
MNO	.07	.10	.09	.10	.12	.11	.09	.12	.10	.10
MGO	51.0	50.6	50.3	50.9	50.7	50.2	50.9	49.7	50.6	50.9
CAO	ND	.07	.10	.10	.12	.11	.12	.10	.24	.12
NIO	.37	.28	.36	.20	.20	.35	.36	.32	.34	.34
TOTAL	99.50	99.91	99.70	100.16	100.18	100.09	100.02	99.06	99.59	100.37

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	4	4	4	4	4	4	4	4	4	4
SI	.996	.997	.999	.988	.990	.996	.990	1.002	.984	.997
TI	-	-	-	-	-	-	-	-	-	-
AL	.001	.001	.001	.001	.001	.002	.001	.001	.003	.001
CR	-	.003	.002	.003	.002	.002	.002	.002	.002	-
FE2+	.145	.156	.157	.164	.167	.168	.157	.161	.162	.155
MN	.001	.002	.002	.002	.002	.002	.002	.002	.002	.002
MG	1.851	1.834	1.827	1.845	1.838	1.822	1.846	1.818	1.846	1.836
CA	-	.002	.003	.003	.003	.003	.003	.003	.006	.003
NI	.007	.005	.007	.004	.004	.007	.007	.006	.007	.007
SUM	3.003	3.001	2.999	3.010	3.008	3.002	3.008	2.996	3.013	3.002
FO	92.73	92.15	92.11	91.82	91.68	91.54	92.17	91.85	91.95	92.20
FA	7.27	7.85	7.89	8.18	8.32	8.46	7.83	8.15	8.05	7.80

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL 11	6	SL A16
2	SL A2	7	SL A23
3	SL A6	8	SL A34
4	SL A7	9	SL A38
5	SL A12	10	SL A57

APPENDIX VI - TABLE C (cont.)
OLIVINE INCLUSIONS

	11	12	13	14	15	16
SIO2	40.6	41.0	40.6	40.6	40.8	40.9
TIO2	ND	ND	ND	ND	ND	ND
AL2O3	.04	.04	.07	.04	ND	ND
CR2O3	.10	.09	.10	.14	.10	.13
FEO	8.46	7.90	8.26	7.71	8.01	8.01
MNO	.11	.12	.11	.11	.11	.13
MGO	50.0	49.5	50.0	50.5	50.1	50.1
CAO	.11	.12	.16	.08	.09	.08
NIO	.36	.32	.36	.35	.37	.36
TOTAL	99.78	99.09	99.66	99.53	99.58	99.71

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	4	4	4	4	4	4
SI	.993	1.006	.994	.993	.998	.999
TI	-	-	-	-	-	-
AL	.001	.001	.002	.001	-	-
CR	.002	.002	.002	.003	.002	.003
FE2+	.173	.162	.169	.158	.164	.164
MN	.002	.002	.002	.002	.002	.003
MG	1.823	1.810	1.824	1.840	1.826	1.823
CA	.003	.003	.004	.002	.002	.002
NI	.007	.006	.007	.007	.007	.007
SUM	3.005	2.993	3.004	3.005	3.001	3.000
FO	91.33	91.78	91.52	92.11	91.77	91.77
FA	8.67	8.22	8.48	7.89	8.23	8.23

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
11	SL A63	16	SL 47-4
12	SL A64		
13	SL A69		
14	SL A77		
15	SL 27-6		

APPENDIX VI - TABLE D
ORTHOPYROXENE INCLUSIONS

	1	2	3	4
SIO2	57.8	57.9	57.5	57.8
TIO2	ND	ND	ND	ND
AL2O3	.93	.49	.86	.78
CR2O3	.48	.41	.44	.48
FEO	4.62	4.57	4.79	4.59
MNO	.10	.12	.10	.10
MGO	35.0	34.6	34.2	34.8
CAO	1.03	1.14	1.36	1.22
NA2O	ND	.04	.06	.06
K2O	ND	ND	ND	ND
TOTAL	99.96	99.27	99.31	99.83

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	6	6	6	6
SI	1.981	1.997	1.987	1.985
TI	-	-	-	-
AL	.038	.020	.035	.032
CR	.013	.011	.012	.013
FE2+	.132	.132	.138	.132
MN	.003	.004	.003	.003
MG	1.788	1.779	1.761	1.781
CA	.038	.042	.050	.045
NA	-	.003	.004	.004
K	-	-	-	-
SUM	3.994	3.988	3.992	3.995
C	1.93	2.16	2.58	2.29
M	91.30	91.09	90.32	90.97
F	6.76	6.75	7.10	6.73
MG/MG+FE	93.10	93.10	92.71	93.11
CA/CA+MG	2.07	2.31	2.78	2.46

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL A25		
2	SL A34		
3	SL A64		
4	SL A88		

APPENDIX VI - TABLE E
OTHER SILICATE INCLUSIONS

	1	2	3	4	5	6	7
SIO2	98.4	99.2	65.8	98.3	65.2	35.0	37.2
TIO2	ND	ND	ND	ND	-	ND	.12
AL2O3	ND	ND	17.5	ND	18.0	ND	61.6
CR2O3	ND	ND	ND	ND	-	ND	ND
FEO	ND	.21	.14	ND	ND	ND	.35
MNO	ND	ND	ND	ND	-	ND	ND
MGO	ND	ND	ND	ND	ND	ND	.08
CAO	ND	.07	ND	ND	ND	ND	ND
NA2O	ND	ND	.52	ND	ND	ND	ND
K2O	ND	ND	15.5	ND	16.8	ND	ND
TOTAL	98.4	99.48	99.46	98.3	100.0	35.09	99.35

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	2	2	8	2	8	4	5
SI	.999	.998	3.041	.999	3.015	1.997	1.011
TI	-	-	-	-	-	-	.002
AL	-	-	.953	-	.981	-	1.974
CR	-	-	-	-	-	-	-
FE2+	-	.002	.005	-	-	-	.008
MN	-	-	-	-	-	-	-
MG	-	-	-	-	-	-	.003
CA	-	.001	-	-	-	-	-
NA	-	-	.047	-	-	-	-
K	-	-	.914	-	.991	-	-
SUM	1.001	1.002	4.962	1.001	4.990	2.003	3.000

AN .01	AN .01
AB 4.85	AB .01
OR 95.14	OR 99.98

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL A11 - COESITE	6	SL A61 - ZIRCON
2	SL A22 - COESITE	7	SL 24-5 - KYANITE
3	SL A29 - SANIDINE		
4	SL A55 - COESITE		
5	SL A55 - SANIDINE		

APPENDIX VI - TABLE F (cont.)
RUTILE INCLUSIONS

	11	12
SIO2	ND	ND
TIO2	98.4	96.6
AL2O3	.20	.48
CR2O3	.08	.06
FEO	ND	.45
MNO	ND	ND
MGO	ND	ND
CAO	.05	.06
TOTAL	98.73	97.65

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	2	2
SI	-	-
TI	.996	.990
AL	.003	.008
CR	.001	.001
FE2+	-	.005
MN	-	-
MG	-	-
CA	.001	.001
SUM	1.002	1.005

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
11	SL A94		
12	SL A97		

APPENDIX VI - TABLE G
OTHER OXIDE INCLUSIONS

	1
SIO2	ND
TIO2	ND
AL2O3	.10
CR2O3	.84
FEO	19.4
MNO	.32
MGO	78.7
CAO	.04
TOTAL	99.40

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	1
SI	-
TI	-
AL	.001
CR	.005
FE2+	.120
MN	.002
MG	.869
CA	.000
SUM	.997

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL A100 - FERRO-PERICLASE		

APPENDIX VI - TABLE H
SULPHIDE INCLUSIONS

	1	2	3	4	5	6	7	8	9	10
FE	60.3	60.1	60.0	60.3	59.6	60.8	60.0	60.3	60.2	60.3
NI	.27	.22	.18	(.23)	.52	.18	.43	.43	(.26)	.31
CR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CO	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CU	ND	ND	ND	ND	ND	(.50)	ND	ND	ND	ND
S	39.0	39.2	39.5	38.6	38.7	38.7	39.4	39.4	38.9	38.8
ZN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL	99.57	99.52	99.68	99.13	98.82	100.18	99.83	100.13	99.36	99.41

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL 19	6	SL 1-7
2	SL 21	7	SL 1-11
3	SL 1-2	8	SL 1-14
4	SL 1-4	9	SL 1-16
5	SL 1-6A	10	SL 1-17

APPENDIX VI - TABLE H (cont.)
SULPHIDE INCLUSIONS

	11	12	13	14	15	16	17	18	19	20
FE	60.2	58.0	59.8	60.0	60.4	60.3	60.6	45.2	60.4	60.3
NI	(.15)	(2.00)			(.21)	(.16)	(.22)	.15	.31	.16
CR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CO	ND	ND	ND	ND	ND	ND	ND	(.94)	ND	ND
CU	ND	ND	ND	ND	ND	ND	ND	(10.0)	ND	ND
S	39.2	39.2	38.4	39.8	39.1	39.2	39.2	(44.2)	38.8	38.9
ZN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL	99.55	99.20	98.2	99.8	99.71	99.66	100.02	100.49	99.51	99.36

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
11	SL 1-19	16	SL A42
12	SL 1-21	17	SL A47-1
13	SL 1-22	18	SL A47-2
14	SL A13	19	SL A53
15	SL A17	20	SL A56

APPENDIX VI - TABLE H (cont.)
SULPHIDE INCLUSIONS

	21	22	23	24
FE	60.0	60.5	61.2	60.9
NI	.32	.28	.14	.22
CR	ND	ND	ND	ND
CO	ND	ND	ND	ND
CU	ND	ND	ND	ND
S	39.2	39.1	39.2	38.6
ZN	ND	ND	ND	ND
TOTAL	99.52	99.88	100.54	99.72

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
21	SL A68		
22	SL A70		
23	SL A71		
24	SL A73		

APPENDIX VI - TABLE I
OTHER POSSIBLY PRIMARY INCLUSIONS

	1	2	3	4	5	6	7	8	9	10
SIO2	.05	51.2	43.8	56.2	52.7	51.4	55.1	30.7	ND	.13
TIO2	20.8	ND	.89	ND	20.4	1.20	.07	37.1	53.4	ND
AL2O3	8.14	.04	9.94	.92	.22	2.01	.05	.27	.10	ND
CR2O3	.61	ND	ND	.36	ND	.42	ND	ND	1.89	ND
FEO	51.0	ND	16.2	10.3	ND	7.22	2.53	.69	28.3	93.2
MNO	.69	ND	.53	.13	ND	.19	.04	ND	.34	.18
MGO	15.9	ND	11.1	18.2	ND	17.3	16.8	1.42	14.2	ND
CAO	ND	48.0	12.0	12.9	ND	19.2	25.2	25.5	.11	ND
NA2O	-	ND	.94	.22	.04	.27	.22	.78	-	-
K2O	-	ND	.84	ND	19.8	ND	ND	.04	-	-
TOTAL	97.19	99.24	96.24	99.25	93.16	99.21	100.04	96.53	98.34	93.51

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	4	18	22	6	0	6	6	20	3	4
SI	.002	5.985	6.366	2.051	0.000	1.910	2.005	4.134	-	.007
TI	.552	-	.097	-	0.000	.034	.002	3.757	.941	-
AL	.338	.006	1.703	.040	0.000	.088	.002	.043	.003	-
CR	.017	-	-	.010	-	.012	-	-	.035	-
FE2+	1.504	-	1.969	.314	-	.224	.077	.078	.555	3.975
MN	.021	-	.065	.004	-	.006	.001	-	.007	.008
MG	.836	-	2.404	.990	-	.958	.911	.285	.496	-
CA	-	6.012	1.869	.505	-	.764	.983	3.679	.003	-
NA	-	-	.265	.016	0.000	.019	.016	.204	-	-
K	-	-	.156	-	0.000	-	-	.007	-	-
SUM	3.269	12.012	14.895	3.932	0.000	4.016	3.999	12.191	2.040	3.992

C			27.89	39.27	49.86
M			54.73	49.21	46.23
F			17.38	11.52	3.91
MG/MG+FE		54.98	75.90	81.02	92.21
CA/CA+MG			33.76	44.38	51.89

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	SL 2 - TITANO-MAGNETITE	6	SL A28 - CPX
2	SL 7 - WOLLASTONITE	7	SL A32 - CPX
3	SL 1-23 - HORNBLENDE	8	SL A54 - SPHENE
4	SL A11 - CPX	9	SL A81 - ILMENITE
5	SL A13 - SI-TI-K	10	SL 45-6 - MAGNETITE

APPENDIX VI - TABLE J
DIAMONDIFEROUS ECLOGITE MINERALS FROM SLOAN

	1	2	3	4	5
SIO2	40.4	55.7	41.5	41.2	54.2
TIO2	.28	.34	.44	.43	.29
AL2O3	23.3	9.82	22.7	22.9	5.23
CR2O3	.06	.06	ND	ND	ND
FEO	15.3	4.01	14.1	14.0	4.22
MNO	.38	.08	.47	.43	ND
MGO	14.1	11.0	15.0	15.1	14.2
CAO	6.46	14.3	6.17	6.33	17.9
NA2O	.10	5.26	.10	.11	3.03
K2O	-	.08	-	-	.07
TOTAL	100.38	100.65	100.49	100.51	99.16

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	12	6	12	12	6
SI	2.963	1.970	3.017	2.996	1.971
TI	.015	.009	.024	.024	.008
AL	2.014	.409	1.945	1.963	.224
CR	.003	.002	-	-	-
FE2+	.938	.119	.857	.851	.128
MN	.024	.002	.029	.026	-
MG	1.541	.580	1.625	1.637	.770
CA	.508	.542	.481	.493	.698
NA	.014	.361	.014	.016	.214
K	-	.004	-	-	.003
SUM	8.020	3.997	7.993	8.006	4.017
C	16.99	43.69	16.22	16.54	43.72
M	51.59	46.75	54.85	54.89	48.24
F	31.42	9.56	28.93	28.56	8.04
MG/MG+FE	62.15	83.02	65.47	65.78	85.71
CA/CA+MG		48.31			47.54

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	TP121 - GAR		
2	TP121 - CPX		
3	SL 56-6 - GAR		
4	SL 56-7 - GAR		
5	SL 56-8 - CPX		

APPENDIX VI - TABLE K
DIAMONDIFEROUS PERIDOTITE MINERALS FROM SCHAFFER

	1	2
SIO2	40.8	.32
TIO2	.09	.30
AL2O3	14.3	7.50
CR2O3	12.3	61.1
FEO	6.00	14.6
MNO	.38	.27
MGO	21.4	14.2
CAO	4.70	ND
NA2O	.03	.04
K2O	ND	ND
NIO	ND	.07
TOTAL	100.02	98.42

** ATOMIC PROPORTIONS BASED ON SELECTED NO. OF OXYGENS **

OXYGEN	12	4
SI	2.987	.011
TI	.005	.007
AL	1.234	.293
CR	.712	1.603
FE2+	.367	.405
MN	.024	.008
MG	2.335	.702
CA	.369	-
NA	.004	.003
K	-	-
NI	-	.002
SUM	8.038	3.035

C	12.01
M	76.03
F	11.96
MG/MG+FE	86.41

**** SAMPLE DIRECTORY ****

SAMPLE NO.	DESCRIPTION	SAMPLE NO.	DESCRIPTION
1	1117 - GAR		
2	1117 - CHR		

APPENDIX VII

OTHER CHARACTERISTICS OF THE SLOAN DIAMONDS (SELECTED SAMPLE)

The primary and secondary inclusions recovered from Sloan diamonds, their paragenesis and their host diamond carbon isotope composition are listed. The column headings are:

Diamond no. - Diamond sample number

Primary incl. - Primary inclusion minerals (minerals in parentheses are possibly primary or, in the case of SL 56-6, SL 56-7 and SL 56-8, are xenolithic minerals associated with the diamond)

COE = Coesite	(Amph) = Hornblende
CPX = Clinpyroxene	(Cor) = Corundum
FEL = K-feldspar	(Cpx) = Clinpyroxene
GAR = Garnet	(Ilm) = Ilmenite
KYN = Kyanite	(Mag) = Magnetite
OLV = Olivine	(Moi) = Moissanite
OPX = Orthopyroxene	(Si-Ti-K) = Si-Ti-K phase
PER = Ferro-periclase	(SiO_2) = quartz/coesite
RUT = Rutile	(Sphene) = Sphene
SUL = Sulphide	(Ti-Mag) = Titano-magnetite
ZIR = Zircon	(Woll) = Wollastonite

Secondary Incl. - Secondary Inclusion minerals

CAL = Calcite
GOE = Goethite
HEM = Hematite
MAG = Magnetite
SER = Serpentine

Para - Paragenesis

E = Eclogitic
P = Peridotitic

C13 Values - $\delta^{13}C$ versus PDB $\pm$ .3 (2σ)

Ave C13 - Average $\delta^{13}C$ value

Range - Within diamond range of $\delta^{13}C$ values

Light Frag. - Light fragment - Internal or External fragments. The abbreviated versions in parentheses indicate the range is below the 2σ error.

Group - Diamond group defined in Chapter 5
I = -5.9 to -3.8
II = -8.5 to -12.8
III = -29.4 to -12.5

APPENDIX VII -- OTHER CHARACTERISTICS OF SLOAN DIAMONDS - SELECTED SAMPLE

Diamond No	Primary Incl.	Secondary Incl.	Para	C13 Values	Ave C13	Range	Light Frag.	Group
SL0002	(Ti-Mag)							
SL0004	(SiO2)	SER						
SL0006	GAR RUT	MAG	E	-19.5 -20.2	-19.8	0.7		III
SL0007	(Woll)							
SL0011	OLV		P	-20.4 -20.6 -20.7	-20.6	0.3		III
SL0019	SUL		E	-27.2 -29.6 -31.4	-29.4	4.2		III
SL0021	SUL		E	-26.0 -27.2 -27.3	-26.8	1.3		III
SL01-02	SUL	SER CAL	E	- 9.5 -10.0	- 9.7	0.5	(INT)	II
SL01-04	SUL		E	- 9.4 - 9.6	- 9.5	0.2		II
SL01-06A	GAR SUL	SER CAL	E	-26.2 -26.4	-26.2	0.2		III
SL01-06B	GAR		E	-22.2 -22.4	-22.3	0.2	(EXT)	III
SL01-07	RUT SUL	SER CAL HEM	E	-10.1 -10.2	-10.2	0.1		II
SL01-09	GAR	SER	E	-18.0 -19.8 -19.8	-19.2	1.8		III
SL01-10	GAR CPX	SER	E	- 8.8 - 9.0	- 8.9	0.2	(INT)	II
SL01-11	CPX SUL	SER	E	- 9.3 - 9.7	- 9.5	0.4		II
SL01-14	CPX SUL (Cor)	SER	E	- 8.6 - 8.8	- 8.7	0.2		II
SL01-15	GAR CPX CPX		E	-10.3 -10.3	-10.3	0.0		II
SL01-16	CPX SUL	SER	E	- 8.9	- 8.9			II
SL01-17	SUL	SER	E	-11.9 -12.3	-12.1	0.4		II
SL01-19	SUL	SER	E	-11.0 -11.4	-11.2	0.4	(INT)	II
SL01-21	SUL		E	-11.1 -11.8	-11.4	0.4	(INT)	II
SL01-22	CPX SUL		E	- 9.0 - 9.2	- 9.1	0.2		II
SL01-23	GAR (Amph,SiO2)	SER	E	-20.6 -21.2	-20.9	0.6	(INT)	III
SL05-0004	GAR CPX		E	-19.1	-19.1			III
SL08-0003	GAR CPX		E	-23.8	-23.8			III
SL20-0001B	GAR		E	-20.3	-20.3			III
SL24-0005	KYN		E	-28.1	-28.1			III
SL27-0006	GAR OLV		P	- 5.9	- 5.9			I
SL30-0001H	GAR		E	-17.1	-17.1			III
SL30-0001I				-17.4	-17.4			III
SL41-0001	GAR		E	-19.7	-19.7			III
SL45-0003	GAR CPX		E	-12.5	-12.5			III
SL45-0006	(Mag)			-14.8	-14.8			III
SL45-0007	GAR		E	-25.5	-25.5			III
SL46-0005	CPX		E					
SL47-0004	OLV		P	- 5.3	- 5.3			I
SL56-0006	(Gar)							
SL56-0007	(Gar)		E	-12.8	-12.8			II
SL56-0008	(Cpx)		E	-10.6	-10.6			II
SLA002	OLV			- 4.1 -4.4 -4.7	- 4.4	0.6		I
SLA003	GAR	SER	E	-18.5 -20.2	-19.4	1.7		III
SLA004	GAR		E	-21.4 -22.6	-22.0	1.2		III
SLA006	OLV		P					
SLA007	OLV	SER	P	- 5.1 - 5.3	- 5.2	0.2		I
SLA009	CPX		E	-15.8	-15.8			III
SLA011	COE (Cpx)	SER	E	-20.8 -21.1	-20.9	0.3		III
SLA012	GAR OLV		P	- 5.8 - 5.8	- 5.8	0.0		I
SLA013	SUL (Si-Ti-K)		E	-19.9 -20.2	-20.0	0.3		III
SLA015	RUT		E	-17.8 -18.2	-18.0	0.4	(EXT)	III
SLA016	OLV		P	- 5.3 - 5.4	- 5.3	0.1		I
SLA017	SUL		E	- 8.5	- 8.5			II
SLA018	RUT		E	-23.1	-23.1			III
SLA022	GAR COE		E	-20.7 -20.8	-20.7	0.1		III
SLA023	OLV		P	- 5.2 - 5.3	- 5.2	0.1		I
SLA024	GAR	SER	E	-20.4 -21.6	-21.0	1.2		III
SLA025	OPX		P	- 3.9	- 3.9			I
SLA026	RUT		E	-19.7 -19.8	-19.7	0.1		III

APPENDIX VII -- OTHER CHARACTERISTICS OF SLOAN DIAMONDS - SELECTED SAMPLE (CONT.)

Diamond No	Primary Incl.	Secondary Incl.	Para	C13 Values	Ave C13	Range	Light Frag.	Group
SLA027	GAR		E	-16.9 -17.7	-17.3	0.8		III
SLA028	(Cpx)			-27.6 -29.2	-28.4	1.6		III
SLA029	FEL	SER	E					
SLA031	GAR		E	-20.4 -20.6	-20.5	0.2		III
SLA032	RUT (Cpx,SiO2)		E	-13.8 -15.3	-14.4	1.7		III
SLA033	GAR	CAL	E	-16.2 -18.4	-17.3	2.2		III
SLA034	OLV OPX		P					
SLA035	(Moi)			-17.7 -18.2	-18.0	0.5		III
SLA037	GAR CPX		E	-18.1 -18.3	-18.2	0.2	(INT)	III
SLA038	OLV		P	- 4.3 - 4.4	- 4.3	0.1		I
SLA042	SUL	SER	E	- 8.5 - 8.6	- 8.6	0.1		II
SLA046	GAR GAR	CAL	E	-15.1 -15.3 -15.6 -15.8	-15.4	0.7	EXTERNAL	III
SLA047	RUT SUL SUL		E	-26.6 -30.0	-28.3	2.4		III
SLA049	CPX		E	-10.5 -10.6	-10.6	0.1		II
SLA052	CPX (Cor)		E	-20.2 -22.6	-21.4	2.4		III
SLA053	SUL (SiO2)	SER CAL	E	- 8.5 - 8.9	- 8.7	0.4		II
SLA054	(Sphene)			-20.0 -20.4	-20.2	0.4		III
SLA055	COE FEL		E	-20.5 -20.8	-20.7	0.3		III
SLA056	SUL		E	-22.9 -23.3	-23.1	0.3		III
SLA057	GAR OLV			-21.5 -21.7 -21.7 -22.7	-21.9	1.2		III
SLA058	RUT		E	-17.3	-17.3			III
SLA061	ZIR			-19.1 -20.8	-20.0	1.7		III
SLA062	GAR		E	-22.8 -25.1	-24.0	2.3	INTERNAL	III
SLA063	OLV		P	- 5.4 - 5.5	- 5.5	0.1		I
SLA064	OLV OPX		P	- 4.4	- 4.4			I
SLA065	GAR	SER GOE	E					
SLA066	GAR		E	-16.0 -16.4	-16.2	0.4		III
SLA067	GAR		E	-21.4 -21.5	-21.5	0.1		III
SLA068	GAR SUL		E	-13.3 -13.4	-13.4	0.1		III
SLA069	OLV	SER	P	- 3.9 - 4.0	- 4.0	0.1	(INT)	I
SLA070	SUL		E	-11.3	-11.3			II
SLA071	CPX SUL	SER	E	- 8.8 - 9.0	- 8.9	0.2	(INT)	II
SLA073	GAR CPX RUT SUL	SER	E	-21.9 -23.3	-22.8	1.4	INTERNAL	III
SLA074	GAR		E	-20.6	-20.6			III
SLA077	OLV		P	- 3.6 - 4.0	- 3.8	0.4	(INT)	I
SLA078	CPX (Moi)		P	- 5.1 - 5.2	- 5.1	0.1		I
SLA080	CPX		E					
SLA081	(Ilm)	SER HEM		-12.7	-12.7			III
SLA087	RUT	SER GOE	E	-18.2	-18.2			III
SLA088	OPX		P	- 4.2 - 4.6	- 4.4	0.4		I
SLA089	(SiO2)			-16.0	-16.0			III
SLA090	(Moi)	SER CAL		- 8.9	- 8.9			II
SLA094	CPX RUT		E	-18.7	-18.7			III
SLA096	GAR	SER	E	-22.4 -22.6	-22.5	0.2	(EXT)	III
SLA097	RUT		E	-21.8 -22.8	-22.3	1.0		III
SLA099	CPX	SER CAL	E	-18.1	-18.1			III
SLA100	PER	SER	P	- 4.3	- 4.3			I